Lith. by J Wilkins. Supg. Surgeon's Office

Bolarum

# REPORT

ON

# THE MEDICAL TOPOGRAPHY

AND

# STATISTICS

OF THE

## NIZAM'S MILITARY CANTONMENTS AND ARMY,

COMPILED

PARTLY FROM RECORDS IN THE SUPERINTENDING SURGEON'S OFFICE, AND REPORTS FURNISHED BY MEDICAL OFFICERS ATTACHED TO THE SERVICE.

PUBLISHED UNDER THE AUTHORITY OF

LIEUTENANT GENERAL J. S. FRASER,

BRITISH RESIDENT, HYDERABAD.

MADRAS:

PRINTED BY D. P. L. C. CONNOR, AT THE CHRISTIAN KNOWLEDGE SOCIETY'S PRESS, CHURCH STREET, VEPERY.

1852.

# ERRATA.

Page 3 Table 1 instead of from 1845 read from 1843.

,, 4 ,, 2 ,, ,, *do.* ,, ,, *do.*

,, 9 Line 15 from top for *Audropagon* read *Andropagon.*

,, 9 ,, 17 ,, ,, ,, *do.* ,, *do.*

,, 9 ,, 32 ,, ,, ,, *Connabinus* ,, *Cannabinus.*

,, 9 bottom line for *Cicerarietinum* read *Cicer Arietinum.*

,, 15 Line 3 from top Stop after Balaghat to be erased.

,, 25 ,, 6 ,, for *wack* read *wacke.*

,, 53 ,, 21 ,, ,, *pœca* ,, *pooi.*

,, 60 ,, 1 ,, ,, *Cerael* ,, *Cæreal.*

## INTRODUCTORY REMARKS.

THESE being the first Reports on the Medical Topography and Statistics of the Nizam's Stations and Army that have been compiled, with the view for publication, since the contingent was formed, a few Prefatory Remarks appear to be called for.

Attention at the commencement of the present year had been drawn to the sickness that seemed generally to prevail in the Company of Artillery at Ellichpoor and reference being made to the Half-yearly Medical Returns for a few years back, the results showed by calculation that a preponderance of admissions into Hospital, as well as casualties did exist, over and above the other companies of Artillery elsewhere and who remain stationary and are not moved periodically like the Cavalry and Infantry Regiments. Upon this other tables were drawn up embracing the whole Army and submitted to the Resident who expressed his approval and consent to the Topographical Reports and Maps being published with them. The former are partly compiled from Records in my Office and from short Reports furnished by Senior Surgeons of Divisions and individual Medical Officers at the outstations. A nobleman in the City of Hyderabad, NAWOB SHUMSHOOL OOMROU BAHADUR, having kindly lent me a Press, the Maps have been Lithographed and struck off; and any defects in their finish or appearance will, it is hoped, be compensated for by their correctness in detail, though much reduced from the original size.

(Signed) R. RIDDELL,
Offg. Suptg. Surgeon,
*Nizam's Army.*

BOLARUM,
*May*, 1852.

# MEDICAL
# TOPOGRAPHICAL REPORTS
OF THE
# NIZAM'S ARMY.

## BOLARUM.

The Cantonment of Bolarum and Head Quarters of the Hyderabad Division Nizam's Army, is situated about twelve miles north of the city of Hyderabad, and about five north of Secunderabad.

There is a most excellent road between the two stations.

Though at so short a distance from Secunderabad and only 60 feet more elevated, still Bolarum has always been remarkable for its salubrity and freedom from the periodical visitations of Fever so prevalent at the Head Quarters of the Hyderabad Subsidiary Force.

Dysentery also, which is so formidable a disease at Secunderabad, very rarely indeed assumes a serious type in this locality, in fact all the cases generally seem most amenable to treatment.

The Granitic Ridge on which the station stands is 1890 feet above the level of the sea. This ridge, though of some extent and forming an open plain on the higher and eastern side of the cantonment of six or seven

miles in circumference, is surrounded on all sides by Paddy fields, and there are several small tanks about the neighbourhood. The gardens produce most kind of European vegetables in perfection besides the common Indian fruits. Mangoes, pineapples and strawberries grow here in great perfection.

The range of the Thermometer throughout the year may be stated at from 50 to 90 degrees in the shade, although in the hot months it sometimes rises much higher.

The winds are westerly in June, July, August and September; during October, November, December, January and February, they blow from the east; and in March, April and May, the north westerly breezes are frequent.

The force at present consists of one Infantry Regiment, one Rissallah and one company of Artillery. The Cavalry furnishing a squadron to Warrungul and the Artillery a detachment to Lingsoogoor.

The Hospital is a lofty, well ventilated building, having every accommodation necessary for about 150 patients, but there are seldom more than a fourth of that number under treatment.

The annual fall of rain may be considered as from 28 to 32 inches, which occurs principally during the south west monsoon, that is between June and October. In the north east monsoon, there is sometimes a fall of some four or seven inches.

Bolarum may be considered the most healthy station in the Deccan, its salubrity is amply borne testimony to by the numerous invalids sent out here for change of air from Secunderabad, and nearly the entire of them derive marked benefit from their residence here.

*Monthly Abstract of a Daily Register of the Thermometer, kept at Bolarum and Ellichpoor, for seven years from 1845 to 1851 inclusive.*

| MONTHS. | BOLARUM. | | | ELLICHPOOR. | | |
|---|---|---|---|---|---|---|
| | 1844. *Mercury.* | | | | | |
| | Max. | Minim. | Mean. | Max. | Minim. | Mean. |
| January, | 84 | 63 | 73½ | 81 | 50 | 65½ |
| February, | 91 | 65 | 78 | 90 | 56 | 73 |
| March, | 98 | 73 | 85½ | 102 | 67 | 84½ |
| April, | 105 | 81 | 93 | 107 | 78 | 92½ |
| May, | 106 | 83 | 94½ | 107 | 84 | 95½ |
| June, | 99 | 75 | 87 | 103 | 78 | 90½ |
| July, | 81 | 74 | 77½ | 92 | 73 | 82½ |
| August, | 87 | 78 | 82½ | 87 | 76 | 81½ |
| September, | 84 | 76 | 80 | 92 | 71 | 81½ |
| October, | 87 | 73 | 80 | 95 | 71 | 83 |
| November, | 85 | 70 | 77½ | 90 | 63 | 76½ |
| December, | 83 | 71 | 77 | 85 | 44 | 64½ |

| MONTHS. | BOLARUM. | | | ELLICHPOOR. | | |
|---|---|---|---|---|---|---|
| | 1845. *Mercury.* | | | | | |
| | Max. | Minim. | Mean. | Max. | Minim. | Mean. |
| January, | 87 | 64 | 75½ | 114 | 45 | 79 |
| February, | 92 | 70 | 81 | 86 | 60 | 73 |
| March, | 100 | 75 | 87½ | 96 | 67 | 81 |
| April, | 104 | 80 | 92 | 104 | 78 | 91 |
| May, | 105 | 83 | 94 | 103 | 81 | 92 |
| June, | 103 | 75 | 89 | 101 | 81 | 91 |
| July, | 93 | 72 | 82½ | 92 | 74 | 83 |
| August, | 92 | 73 | 82½ | 86 | 75 | 80 |
| September, | 95 | 73 | 84 | 89 | 76 | 82 |
| October, | 95 | 70 | 82½ | 96 | 72 | 84 |
| November, | 90 | 66 | 78 | 88 | 66 | 77 |
| December, | 86 | 67 | 76½ | 83 | 64 | 73 |

| MONTHS. | BOLARUM. | | | ELLICHPOOR. | | |
|---|---|---|---|---|---|---|
| | 1846. *Mercury.* | | | | | |
| | Max. | Minim. | Mean. | Max. | Minim. | Mean. |
| January, | 90 | 67 | 78½ | 88 | 63 | 75 |
| February, | 94 | 69 | 81½ | 99 | 65 | 82 |
| March, | 102 | 76 | 89 | 97 | 72 | 84 |
| April, | 103 | 80 | 91½ | 100 | 79 | 89 |
| May, | 105 | 81 | 93 | 106 | 85 | 95 |
| June, | 105 | 75 | 90 | 104 | 81 | 92 |
| July, | 94 | 71 | 82½ | 90 | 76 | 83 |
| August, | 88 | 74 | 81 | 86 | 76 | 81 |
| September, | 88 | 72 | 80 | 86 | 75 | 80 |
| October, | 90 | 69 | 79½ | 87 | 70 | 78 |
| November, | 92 | 64 | 78 | 87 | 61 | 74 |
| December, | 84 | 61 | 72½ | 81 | 56 | 68 |

| MONTHS. | BOLARUM. | | | ELLICHPOOR. | | |
|---|---|---|---|---|---|---|
| | 1847. *Mercury.* | | | | | |
| | Max. | Minim. | Mean. | Max. | Minim. | Mean. |
| January, | 87 | 64 | 75½ | 84 | 54 | 69 |
| February, | 88 | 67 | 77½ | 89 | 51 | 70 |
| March, | 99 | 72 | 85½ | 95 | 59 | 77 |
| April, | 99 | 75 | 87 | 100 | 65 | 82 |
| May, | 102 | 76 | 89 | 108 | 81 | 94 |
| June, | 92 | 73 | 82½ | 98 | 76 | 82 |
| July, | 86 | 73 | 79½ | 89 | 73 | 81 |
| August, | 87 | 73 | 80 | 87 | 73 | 80 |
| September, | 89 | 70 | 79½ | 88 | 73 | 80 |
| October, | 88 | 72 | 80 | 88 | 68 | 78 |
| November, | 82 | 64 | 73 | 89 | 61 | 75 |
| December, | 84 | 63 | 73½ | 80 | 57 | 68 |

| MONTHS. | BOLARUM. | | | ELLICHPOOR. | | |
|---|---|---|---|---|---|---|
| | 1848. *Mercury.* | | | | | |
| | Max. | Minim. | Mean. | Max. | Minim. | Mean. |
| January, | 90 | 62 | 76 | 82 | 56 | 69 |
| February, | 93 | 65 | 79 | 88 | 61 | 74 |
| March, | 98 | 72 | 85 | 94 | 70 | 82 |
| April, | 102 | 76 | 89 | 107 | 81 | 94 |
| May, | 105 | 75 | 90 | 108 | 80 | 94 |
| June, | 92 | 74 | 83 | 94 | 73 | 83 |
| July, | 91 | 72 | 81½ | 97 | 73 | 85 |
| August, | 87 | 73 | 80 | 95 | 72 | 83 |
| September, | 95 | 73 | 84 | 94 | 75 | 84 |
| October, | 92 | 73 | 82½ | 94 | 74 | 84 |
| November, | 82 | 65 | 73½ | 90 | 61 | 75 |
| December, | 85 | 67 | 76 | 85 | 60 | 72 |

| MONTHS. | BOLARUM. | | | ELLICHPOOR. | | |
|---|---|---|---|---|---|---|
| | 1849. *Mercury.* | | | | | |
| | Max. | Minim. | Mean. | Max. | Minim. | Mean. |
| January, | 85 | 60 | 72½ | 58 | 53 | 69 |
| February, | 94 | 66 | 80 | 98 | 63 | 80 |
| March, | 101 | 73 | 87 | 101 | 74 | 87 |
| April, | 103 | 76 | 89½ | — | — | — |
| May, | 104 | 78 | 91 | — | — | — |
| June, | 93 | 74 | 83½ | — | — | — |
| July, | 90 | 72 | 81 | 88 | 80 | 84 |
| August, | 87 | 72 | 79½ | 90 | 79 | 84 |
| September, | 89 | 72 | 80½ | 89 | 80 | 84 |
| October, | 91 | 68 | 79½ | 87 | 72 | 79 |
| November, | 89 | 70 | 79½ | 91 | 69 | 80 |
| December, | 83 | 65 | 74 | 83 | 62 | 72 |

| MONTHS. | BOLARUM. | | | ELLICHPOOR. | | |
|---|---|---|---|---|---|---|
| | 1850. *Mercury.* | | | | | |
| | Max. | Minim. | Mean. | Max. | Minim. | Mean. |
| January, | 82 | 61 | 71½ | 89 | 52 | 70½ |
| February, | 88 | 64 | 76 | 89 | 60 | 74½ |
| March, | 97 | 79 | 88 | 97 | 63 | 80 |
| April, | 98 | 72 | 85 | 107 | 70 | 88½ |
| May, | 100 | 79 | 89½ | 109 | 80 | 94½ |
| June, | 97 | 73 | 85 | 105 | 75 | 90 |
| July, | 89 | 74 | 81½ | 102 | 72 | 87 |
| August, | 86 | 73 | 79½ | 96 | 75 | 85½ |
| September, | 85 | 71 | 78 | 97 | 73 | 85 |
| October, | 84 | 71 | 77½ | 95 | 74 | 84½ |
| November, | 82 | 63 | 72½ | 93 | 63 | 78 |
| December, | 81 | 61 | 71 | 90 | 64 | 77 |

*Monthly Abstract of a Daily Register of the Pleuviometer, kept at Bolarum and Ellichpoor, for seven years from 1845 to 1851 inclusive.*

| MONTHS. | BOLARUM. | | ELLICHPOOR | | BOLARUM. | | ELLICHPOOR | | BOLARUM. | | ELLICHPOOR | | BOLARUM. | | ELLICHPOOR | | BOLARUM. | | ELLICHPOOR | | BOLARUM. | | ELLICHPOOR | | BOLARUM. | | ELLICHPOOR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1844. *Rain.* | | | | 1845. *Rain.* | | | | 1846. *Rain.* | | | | 1847. *Rain.* | | | | 1848. *Rain.* | | | | 1849. *Rain.* | | | | 1850. *Rain.* | | | |
| | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. | Ins. | Cts. |
| January, - - - - | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 58 | 2 | 43 | — | — | — | 80 |
| February, - - - | — | 43 | 2 | 23 | — | 45 | 1 | 86 | — | 90 | — | — | 3 | 36 | — | 31 | — | — | — | — | 1 | — | — | 11 | 2 | 30 | — | — |
| March, - - - - | — | 65 | — | — | — | 82 | — | 13 | — | — | — | — | — | — | — | — | — | 30 | — | — | — | — | — | — | — | — | — | 57 |
| April, - - - - | — | 6 | — | — | — | 35 | — | — | — | 50 | — | — | — | 60 | — | 4 | — | 57 | — | 35 | 1 | 57 | — | — | — | 8 | 2 | 24 |
| May, - - - - | 2 | 26 | 1 | — | — | 20 | 1 | 28 | 1 | 1 | — | 85 | — | 24 | 1 | 24 | 3 | 50 | — | 64 | 2 | 3 | — | 82 | — | — | — | — |
| June, - - - - | 3 | 55 | 1 | 33 | 4 | 48 | 5 | 27 | 5 | 7 | 8 | 55 | 5 | 77 | 8 | 3 | 2 | 82 | 8 | 50 | 3 | 33 | 2 | 60 | 7 | 11 | 5 | 90 |
| July, - - - - | 7 | 51 | 3 | 90 | 5 | 19 | 6 | 57 | 8 | 18 | 10 | 64 | 5 | 26 | 12 | 33 | 1 | 63 | 4 | 63 | 5 | 98 | 7 | 37 | 3 | 60 | 16 | 36 |
| August, - - - | 1 | 39 | 2 | 95 | 2 | 54 | 4 | 88 | 3 | 28 | 2 | 4 | 2 | 97 | 6 | 5 | 3 | 57 | 8 | 74 | 7 | 22 | 7 | 32 | 4 | 91 | 4 | 8 |
| September, - - - | 7 | — | 2 | 73 | 2 | 89 | 2 | 4 | 4 | 12 | 9 | 32 | 9 | 63 | 4 | 30 | — | 34 | 1 | 38 | 12 | 16 | 12 | 88 | 7 | 41 | 2 | 51 |
| October, - - - | 5 | 22 | — | — | 1 | 9 | — | — | — | 84 | — | — | 10 | 64 | — | 58 | 2 | 25 | — | 58 | 3 | 12 | 4 | 45 | 11 | 98 | 2 | 25 |
| November, - - - | — | — | — | — | — | — | — | — | — | — | — | — | — | 5 | 4 | 8 | 1 | 83 | 1 | 45 | — | 52 | 2 | 57 | — | 97 | — | 74 |
| December, - - - | — | 32 | — | — | — | 63 | | 4 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 82 | — | — |
| Total... | 28 | 39 | 14 | 14 | 18 | 64 | 24 | 43 | 23 | 90 | 31 | 40 | 38 | 52 | 36 | 96 | 19 | 81 | 26 | 27 | 37 | 51 | 40 | 55 | 39 | 18 | 35 | 45 |

Lith. by J. Wilkins. Superintd. Surgeon's Office Bolarum

## WARRUNGUL.

The Cantonment of Warrungul was formed in the year 1847. Its force consists of one Regiment of Infantry and a squadron of Cavalry furnished from the Rissallah at Head Quarters, it is situated on a low plain near the bottom of some high rocky granite hills. The soil is partly black and partly composed of red sand. There is no jungle of any consequence within four miles of the place. Tanks are in great numbers in all directions and Rice cultivation is carried on extensively close up to the bounds of the cantonment.

From the proximity to the rocks the temperature may be two or three degrees higher than that of Bolarum. During the greater part of March and April, a fresh cool breeze blows from the south east which the Natives call the "salt wind" and consider very healthy.

The Bazar is placed on the extreme north east and next to that is the parade ground. On the south side of the parade ground stand the Barracks and Lines and to the south of these at some distance, the Hospital and officers' houses.

The face of the country in this neighbourhood presents a striking similarity to that in the vicinity of Hyderabad. There are the same rounded dark-coloured herbless eminences, solitary, or in groups of inconsiderable range, rising to the height of three or four hundred feet, with the same ruinous appearance of the lower hills, and the fantastic piling of one boulder of rocks on another.

The tank with its mound of earth or masonry, and the sheet of verdure which it nourishes and maintains serve

to complete the resemblance of general form and outline.

Nor does a more minute examination detect many discrepancies. The surface rock throughout is granite, usually of a greyish colour, but varying from a dingy white to a reddish, and more rarely to a blackish hue, according to the colour and predominance of each of its constituent parts; quartz, felspar and hornblende, where quartz is prevalent the rock is close-grained and compact with little tendency to wear; while on the other hand the most superficial examination will show that the excess of the two last, and more particularly of the felspar, is the certain cause of decay.

In one locality at the village of Naguarum, five miles to the north of this, so abundant is the hornblende and felspar to the exclusion of quartz in several specimens of the rock, that they might be called sienitic green stone. No where is mica seen to take the place of the hornblende, hence the whole formation might, with more propriety, be termed sienite than granite, particularly if the latter term is to be restricted to a determinate compound, sienitic granite, however, a compromise between the two would appear the better, and most intelligible term for the rock as it exists here.

In a spur of hills running north and south near the village of Erapully, ten miles to the west of Hunumkoondah, the granite becomes stratified, or in other words passes into gneiss. At the foot of these hills an ore is found of that kind usually called magnetic iron ore, also black iron ore, a compound of protoxide and peroxide of iron.

Limestone, from its being commonly employed by the Natives, must exist in considerable quantity; by their account it would appear to form nests in the granite.

## The Soil is of Four Descriptions.

1*st*. *The Chelka.*—A red gritly soil little fitted from the coarseness of its particles for the purpose of agriculture.

2*d*. *Lal Zumeen.*—A soil also of a reddish hue, and evidently the former in a more comminuted state. This is put beyond doubt by the Ant hills formed on the Chelka soil, being composed of this earth. We thus see that these insects usually looked on as troublesome, and destructive pests, are not without their use in a grand natural operation.

The peculiar acid, the formic which is their chief agent, acts on the alkali and lime and most probably on the silica of the rock, pulverising it and facilitating in all probability fresh combinations. This soil, when manured, is fitted for the reception of every kind of crop without reference to season.

3*d*. The *Regur Soil* is of less frequent occurrence than the two last mentioned. As elsewhere it is particularly adopted for cotton cultivation, and is generally esteemed the richest of soils. It requires little or no manure, yet the ryots are in the habit, previous to cropping, to let sheep loose upon it. It being supposed that their urine is very advantageous to its fertility, this is exceedingly probable; as the salts which the urine contains and the compounds they form must prove very efficacious in loosening the soil, and preventing the formation of clods, the common drawback of argillaceous soils.

4*th*. *The Talab-ka-Zumeen.*—The black soil found in the bottom of tanks. This is little esteemed being a stiff clay, little permeable by moisture. It abounds in fresh water shells, and at the beginnings of the dry season its surface is encrusted with carbonate of soda of which

mineral, large quantities are collected for soap making. A property common to all these soils is that they effervesce with acids, thereby indicating the presence of carbonate of lime.

As far as our geological knowledge can lead us the presumption is that these soils in all their varieties are nothing more than the decomposed sienitic rock, and considering the number of simple bodies of which this is composed, viz.: oxygen, silicon, aluminium, calcium, potassium, sodium, iron, and perhaps manganese and the ever-varying proportions of its more immediate ingredients, we cannot wonder at, although we may fail to explain their striking diversity.

When the ground is left uncultivated even for the short space of a year or two, it never fails to be covered by a low jungle composed chiefly of the cassia auriculate and zizyphus microsphylla, the former plant is hardy and luxuriant, and is in every respect the peculiar enemy of the cultivator, who certainly does not take the most effectual means to rid his fields of it, contenting himself with burning it, or cutting it down to the level of the soil instead of rooting it up. Of the jungle trees by far the most common is the butea frondosa, which with the bombax-heptaphyllium and the erythrina indica stand out as the most gayish of the forest trees. The garruga pinnata, hyperanthera moringa, cassia fistula, annona reticulata, melia azederachta, bauhinia parviflora, capparis trifoliata, ficus indica, ficus religiosa, bombax gossypium, a species with yellow flowers, feronia elephantum, with four or five species of acacia make up the list of the more common jungle trees. The borassus flabelliformis, the palymyra tod is every where seen which with the elate sylvestris, also common, yields in great abundance the well known toddy. The mango, and tamarind trees are common about villages.

The grain chiefly cultivated is rice, of which no fewer

than eight varieties are sown. Of these the beetee nadro is the most cultivated, being both a rain and a dry weather crop. It is a middle sized grain with a husk of a light brown color; two of the other kinds are much smaller grains with white husks, the other five differ in size, colour of husk, &c.

Little of the rice raised is consumed by the inhabitants, but sent to Hyderabad, forming the principal export with cotton seed.

In the districts, its consumption is limited to the richer Mahomedans, Hindoo Zemindars, Brahmins, &c. The poorer classes derive their subsistence chiefly from the rain or punass crops.

The principal punass or khureef crops are as follows :— Of grains, audropogan sorghum, two varieties of jooarry, red and white. The first only properly a punass crop. Audropogan saccharatum (bajree), paspatum scrobiculatum, triticum wheat, a red sort sparingly cultivated, panieum, italicum, italian millet, cynosarus, corncanus (raggy), and zea mays. Of oil plants sesamum orientali, black and white ricinus communis two kinds.

The garden produce consists of red pepper, brinjals, onions, garlic, carrots, radish, sweet-potatoe, dill, coriander, and bishopweed seeds, mustard seed for oil, fenugreek and some species of amaranthus for greens. They use also the flowers of both species of the aeschynomone grandiflora as a pot herb.

Melons, cucumbers and gourds, as in other parts of India, form a considerable article of diet, particularly in the dry season.

Of legumes, dolichos lablab, dolichos gladiatus, dolichos fœbœ formis, phaseolus mungo, hibiscus connabinus (umbarrah), a hemp plant (leaves used by the Natives as greens) and a variety of cotton called lal-kapas. The rubbee crops consists of white jowarree, holcus saccharatus, gram cicerarietinum d'hal citysus cajan, moong phas-

eolus mungo (a black variety). Crotularia juncea (the sun plant), cotton, sugar and paun (piperbetel), are also cultivated to a limited extent, and also tobacco of inferior quality.

It is remarked that the flavour of tobacco irrigated from a well of brackish water, is superior to that irrigated by sweet water. This can be easily understood as a common means with fraudulent tobacconists of heightening the flavour of their tobacco, is by dipping it in a saline solution.

At the village of Hussunputtee, five miles off, many looms are engaged in weaving tusser or jungle silk; and at Mutwarrah, near Warrungul, carpets of a very superior description either of silk and cotton, or wool and cotton are manufactured.

Warrungul is distant 106 miles from Bolarum the Head quarters of the division.

Lith. by J. Wilkins Superintg. Surgeon's Office

## LINGSOOGOOR.

The Cantonment of Linsoogoor is situated in latitude 16° 9′ North, and longitude 76° 35′ East, 10 to 12 miles south of the river Kistnah, here running in a north-easterly direction. It lies two and a half miles to the north of the village of Lingsoogoor, upon the north-east corner of a tank, about three quarter of a mile in length and three-eighths of a mile in width.

On the north-west corner of the tank is the village of Kurrikul, said to contain 300 houses.

The surrounding country is flat with a few low scattered hills, usually composed of masses of granite irregularly piled one upon another.

The soil immediately around the cantonment, is of a reddish colour, loose, sandy, and of no great depth, with a substratum of rock, which in many places shows itself above the soil, and of which loose blocks are every where scattered over the surface.

At the time of the formation of the cantonment, this soil was covered with a low open jungle. This, however, has since been almost entirely cut down giving the country a bleak and barren aspect. About five miles towards the north and west, where the soil is of the same description, low open jungle again make its appearance, and extends as far as the Kistnah.

After the rains, the soil in this jungle, becomes speedily covered with a luxuriant crop of grass, which, on being cut and dried, forms hay of excellent quality, and hence are drawn the supplies for the Cavalry, Karkhana and Store Departments.

At a short distance from the cantonment to the south and west, the soil consists of a rich black mould produ-

cing abundant crops of wheat, gram, jowarree, and other grain.

Several villages within the district are engaged in the manufacture of chloride of sodium. At Seergaum, a village five miles to the east, it is collected in considerable quantity from the black soil—when ready for sale, it looks white and good but has a somewhat bitter taste. It is thought by the Natives that the long continued use of it produces sickness, particularly eruptions of the skin, and on this account it has not been so much used since the introduction of the Company's salt on the formation of the cantonment. The comparatively high price of the latter, however, places it beyond the reach of many, who consequently are obliged to use the salt made in the district.

At Lingsoogoor, and other villages in the district, nitrate of potass of good quality is obtained.

Besides these salts carbonate of soda is obtained from the soil in many places in an impure state, but still sufficiently pure to be used by the Dhobees.

The winds are frequently high, occasionally blowing almost a hurricane. They are at the same time variable, frequently veering half round the compass in the course of a few hours.

The following Table gives the fall of rain during the last five years:—

| | *Fall of Rain up to 31st August.* | | *Total to 31st December.* | |
|---|---|---|---|---|
| | Inches. | Cents. | Inches. | Cents. |
| 1847.......... | 13 | 14 | 19 | 17 |
| 1848.......... | 11 | 91 | 20 | 50 |
| 1849.......... | 22 | 56 | 34 | 27 |
| 1850.......... | 8 | 81 | 25 | 60 |
| 1851.......... | 8 | 58 | 17 | 67 |

The most common diseases in this part of the country are Intermittent Fever and Chronic Rheumatism.

The cases of fever are not very numerous, but the attacks, though seldom severe, frequently recur, and are often accompanied with tenderness and enlargement of the spleen, particularly in children. Under the use of purgatives, quinine and counter irritation, this enlargement usually readily subsides.

Cholera is said periodically to ravage the surrounding country. Last year, during the month of May, a great number of cases, many ending fatally, occurred in Kurrikul and the adjacent villages. In the cantonment bazar there were six deaths.

The Natives cannot in any instance be induced to take medicine from the hospital.

Guinea worm is not uncommon in the neighbourhood, but no severe cases have been seen.

Small pox periodically visits the district. During the month of April, 1851, it was said to have been very severe in its ravages in some of the villages to the southward; but very few cases occurred in the immediate neighbourhood. The people entertain strong prejudices against vaccination, and cannot be induced to submit to it.

Of the vaccine lymph supplied last year very little succeeded. Of that supplied this year none as yet taken effect.

From the eastern edge of the tank, at its northern extremity, the ground rises with a gradual slope and on this are built the Officers lines facing due west. Beyond the extreme right of these and consequently to the north, lie the Sepoy's lines, stretching westward, from the Sepoy's lines lies the cantonment bazar.

In the bazar are 338 houses, containing 1,173 inhabitants, of these there are males 451, females 407, males under 10 years of age 161, females under 10 years 154. There are in the bazar 148 cows, 120 bullocks, 254 buffaloes, 52 tatoos and 10 carts.

Within the cantonments there are (including those in the Officers compounds) 17 wells, yielding a plentiful supply of well-tasted water, apparently containing very little saline matter. During the hot season of 1849 some of these wells became dry; but in digging in the bed of the tank (then also dried up), a supply of water was thence obtained.

The hospital for the Infantry Regiment Detachment of Artillery, Troop of Cavalry, and Store Department, faces east by south. It is situated behind and to the east of the Officers lines, at the top of the rise, being about 40 feet above the level of the tank when full. To the left lies the Parade ground, in front, and to the right the open country. The situation is dry, airy and healthy, though perhaps too much exposed to the high winds which occasionally prevail. The building is 92 feet in length, and 14 feet in height at the side walls. In the centre is a ward 69 feet by 16 containing three doors, five windows and ventilators in the roof. To the right of this is a small ward, used for particular cases, 16 feet by 10. To the left is the Dispensary, one way 16 feet by seven, the other 15 feet by seven, about eight feet of the rear verandah having been enclosed and added to it. In front and rear of the hospital is a verandah seven feet wide, of that to the rear the end opposite the Dispensary has been enclosed, forming a bath-room eight feet by seven. The walls of the building are one and a half feet in thickness, the floor is composed of hewn stone cemented with chunam, and the whole is covered with a tiled roof.

*Vegetable Product.*—The productions are rice of various sorts, millet, cholum, doll, gram, gingilie seed, wheat, Indian corn, beans of several varieties, brinjals, carrots, onions, garlic, pumpkins, bandekoy and snake gourds.

Lingsoogoor is distance from Head Quarters about 165 miles.

Lith. by T. Wilkins. Supg. Surgeon's Office

## MOMINABAD.

Amba or Ambajoghai situated on the high table lands of the Balaghat, at an elevation of 2,500 feet above the level of the sea, it is the highest spot on the Balaghat-Dharoor about 20 miles to the west excepted.

The town of Amba Joghai is in latitude 18° 45′ North, longitude 76° 40′ East, and contains about 15,000 inhabitants. A nullah runs over a rocky bed on the west and east side of the town. All superfluous water is carried off by this outlet during the rains, and it is seldom dry during the hot months of the year.

The village, and cantonments of Mominabad, the Head Quarters of the Cavalry Division are in a hollow, surrounded by low hills, the village occupying the north east corner of the basin, it is surrounded by a stone wall (breached in several places) about two miles in circumference, and has no ditch. The houses for the most part are substantially built of stone, but are much out of repair. The only stagnant water likely to give out miasma is a tank on the north and by west side of the village, but too far distant from the cantonments to affect the health of its inhabitants. The soil is mostly black, alluvial in the hollow, but on the surrounding high ground there is much trap rock and decayed trap. The country round about appears to be well cultivated, jowarree, gram and wheat, the principal grain produced, but the roads are bad and out of repair like most other places in the Nizam's country. Amba is almost encircled by nullahs which during the monsoon render travelling, except on horseback, almost impassible.

*Climate.*—The climate is very superior enjoying a de-

lightful medium between the extremes of heat and cold, experienced in the upper provinces of Hindoostan. The hot wind during the latter end of March and the months of April, May and the beginning of June does prevail, but never to the extent, to make it extremely disagreeable to expose yourself to it, and it is always followed by cool and refreshing breezes soon after sunset. In the cold season the climate is by no means severe but much more congenial to an Anglo Indian, than excessive cold.

The monsoon usually sets in about the middle of June and ceases about the end of September, and this is altogether the most pleasant season of the year. During the last year and a half the temperature has been extremely cool, and up to the present time (April the 15th) there had not been a puff of hot wind, and neither thermantidotes or tattees were in use. There is little or no jungle in the neighbourhood of Amba, indeed so scarce is wood from this cause, that it is necessary to send to a distance of 15 or 20 miles to procure firewood. There are many deep ravines amongst the hills close to cantonment, but with little or no vegetation. Neelghi and Leopards, are to be found in these ravines. For want of Meteorological instruments no particulars of atmospheric changes during the period over which this report extends can be given, but the most remarkable atmospheric phenomena which took place was a violent thunder-storm about the middle of March last. The rain fell in torrents, accompanied with large hail stones, the size of an egg. The storm continued about twelve hours, and during the time many head of cattle were destroyed in the surrounding neighbourhood and much damage done to the vegetation in cantonment, its direction was from south-east and circumscribed.

Within the last three years the Cavalry lines of this station have been changed, and most advantageously so, as regards the health and comfort of the men. They are

now divided into two parts, the Right Wing is situated on the rising ground, west from the town of Amba, and extending towards the Durgah on the Aurungabad road. The Left Wing is situated on a lower elevation, but in a contiguous line, and immediately adjoining the parade ground. In both lines the houses appear comfortable and well built, but being chuppered instead of tiled are subject to constant fires. Within the last three months there have been no less than sixty houses destroyed, from this cause entailing much expense and inconvenience on their occupants. On the south, and about two hundred yards from the Right Wing is a large tank which was made last year at Government expense. It is about 1,000 yards in circumference and in consequence of the late storm, already described, is nearly full of water and of almost indescribable advantage to the cantonment in general, from the fact of its keeping the different bowries from becoming dry during the hot season, and particularly to the Right Wing from its so nearly adjoining it, besides adding much to the scenery of the place when viewed from a distance.

The Regimental bazar is to the east of the Left Wing and conveniently situated for both lines, and contains about 3,000 inhabitants including women and children. There are two markets held weekly on Thursday and Saturdays, and in the town of Amba itself a large Juthra is annually held in the month of December. The principal merchandise brought for sale are copper and brass vessels for household purposes and cloths of different varieties. The fair generally lasts for six weeks. Immediately adjoining the town of Amba on the north-west side are some caves partly hewn out of a solid rock, and some of the rooms are of large proportions permitting a man to stand erect in them, and supported by pillars ; there appear to be no figures as is usually the case on the walls, but just at the entrance of the caves are two or three figures of elephants

formed of stone—tradition says that these caves extend to the town of Purley, a distance of fifteen miles from Amba, but which of course is a fallacy.

*The Hospital* is a pukka building with tiled roof and chunam floor raised a foot from the ground—height of roof in the centre 20 feet, inner walls 16 feet, verandah pillars eight feet, outside measurement 77 feet long, by 42 feet broad—the centre ward is 44 feet by 15, and is ventilated by a door and two windows on each side, at each extremity of this ward is an apartment 15 feet by 12, one used as a laboratory, the other for a guard. The front verandah which faces the north is 73 feet by 11 and the rear verandah has a room at each end, 12 feet by 9, one used as a surgery for the staff, and the other as a bath room. The situation of the hospital is in front of where the old bazar was and to the east side of the Cavalry lines about 500 yards from the Left Wing with the Regimental bazar intervening between them.

Within the last two years Government has purchased a house and assigned it as a Travellers' Bungalow which was much required. Amba being a thoroughfare between the stations of Jaulnah, Aurungabad and Secunderabad. The bungalow itself differs from those in other parts of the country, inasmuch as it is a chuppered building, and contains much more accommodation. It is situated on the rising ground immediately adjoining the Mess house. During the last year the roads in cantonment have been put in repair, and a high hill levelled on the road extending from the eastward and running up to the Durgah, close to the cavalry lines; there have been trees planted on each side of this road, which in a few years will add much to its appearance.

There are seven bungalows in cantonment appropriate for the residence of officers, one alone being uninhabited. There is a grave yard for Christians, where are buried

several who died at the station, in which also is a monument, erected at Government expense, to the memory of the late Brigadier Davies. There is also a large Mahomedan burial ground immediately adjoining the Christian grave yard.

*Health of Troops.*—During the last year and a half the health of the Troops has been good, one death only having occurred from cholera, which, though at one time during the last monsoon, was very severe in the surrounding villages and particularly in Badee, which immediately adjoins the public drive, there having been but three cases in the Regiment, and one death as before mentioned, and even this case was almost moribund when admitted into hospital. It may be interesting to state how far the relative position of the two wings of cavalry, inasmuch as the situation of one is much more elevated than the other, may have affected the health of the troops, and accordingly on making a comparison of the hospital admissions during the year 1851, there were from the Left Wing 277 admissions, in the Right Wing, which is on the elevated ground, the number only was 208. Fever in both instances being the principal disease, and of the usual intermittent type. But again on comparing the mortality during the year in the regiment, or more properly speaking from September 1850, to March 1852, the deaths have been three, viz., one from cholera, one from atrophy, and one apoplexy—all in the right wing—whilst in the left there have been none, however, there is little importance to be attached to this fact, when considering the relative positions of the lines in a hygienic point of view, as the situation could have nothing to do in proximating the cause of the deaths recorded. There has been no epidemic with the exception of the few cases of cholera before referred to.

## GOOLBURGAH OR KULBURGAH.

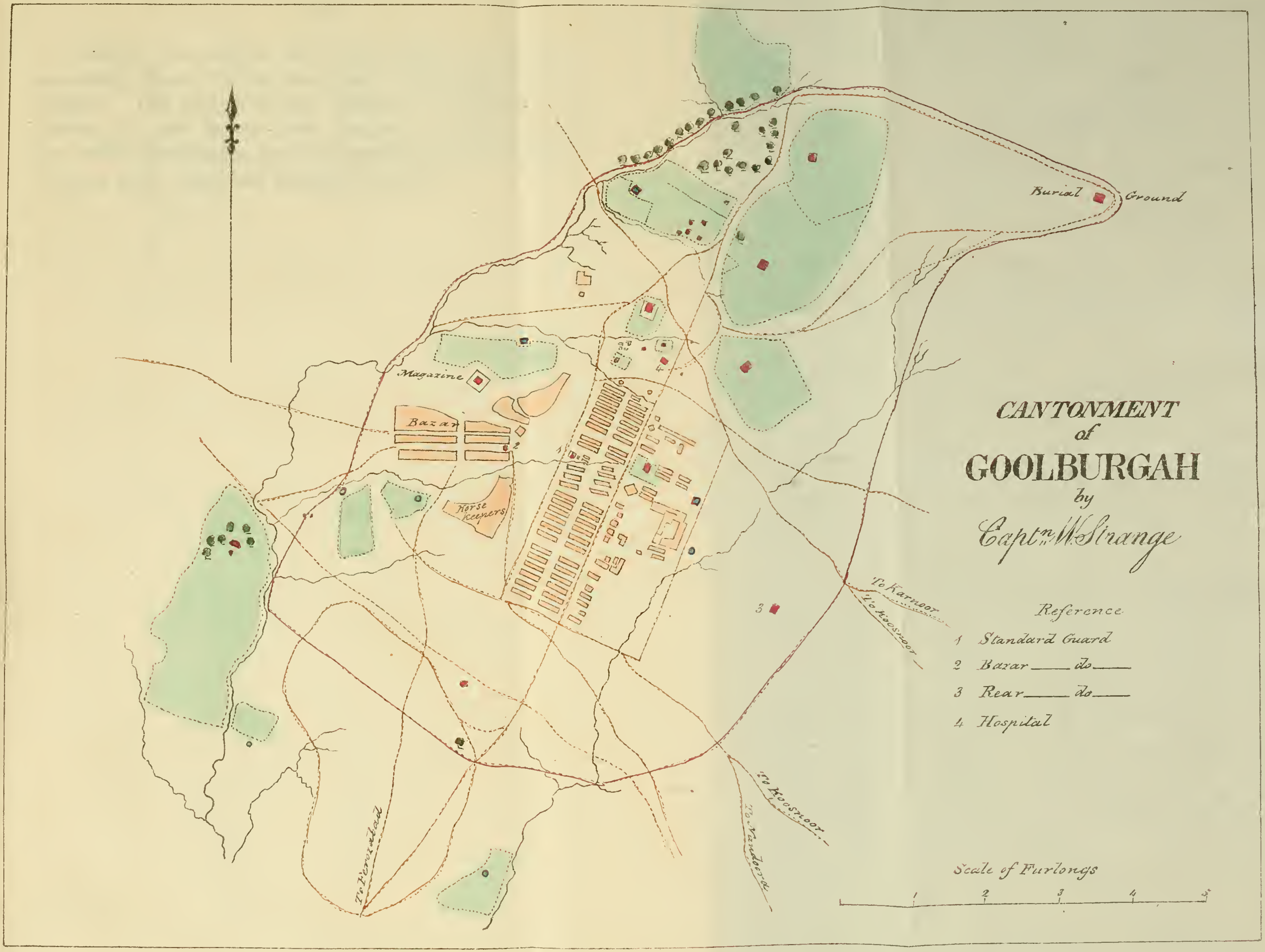
At present a place of little note, though famous in former times as the capital both of a Hindoo and Mahomedan Sovereignty, lies in latitude 17° 20′ North, longitude 76° 54′ East, and about 120 miles west of the city of Hyderabad.

The cavalry cantonment is situated, three quarters of a mile to the south of the native town, in a hollow space of black cotton soil, surrounded by low hills, distant on the north and west sides about a mile, and a mile and a half, and on the south and east from three to five miles.

*Climate.*—May be characterized as that of the Deccan generally. The maximum of thermometer (suspended in an open verandah fronting the north-west) as taken for the year 1850, was 103°, minimum 52° ; and for the past year 106° maximum, 54° minimum, average fall of rain 29 inches. During the four months of cold weather, the atmosphere is dry and bracing, the nights very cold, and the whole day delightfully cool and pleasant.

The prevailing diseases of this part of the country are fever, guinea-worm, urinary calculi, and psora. "Fevers" are of the ordinary intermittent type; their only peculiarity being an extreme tediousness of convalescence and a strong tendency to relapse.

"Dracunculus" rages almost epidemically at certain seasons, and the Natives of this place have a strong conviction that the worm is generated as much by eating particular kinds of vegetables as by water.


CANTONMENT
of
GOOLBURGAH
by
Captn. W. Strange
Magazine
Bazar
Horse keepers
Burial Ground
To Karnoor
To Koosnoor
To Koosnoor
To Ferozabad
Reference
1 Standard Guard
2 Bazar ___ do ___
3 Rear ___ do ___
4 Hospital
Scale of Furlongs
1 2 3 4 5

"Calculi" are said to be very common in the surrounding villages, but no cases have been admitted into hospital. The Natives having unbounded confidence in a disciple of the famous Friee Facquer; by whom they are visited periodically, and who appears from all accounts, to be a most expert and successful operator.

## AURUNGABAD DIVISION.

The eity of Aurungabad is in longitude 76·03 East, and latitude 19·46 North, it was originally called Gorrkha; but after changed by Aurungzeeb when Viceroy of the Deccan, it was then an extensive well built town, abundantly supplicd with water brought by aquaducts from the surrounding hills in the neighbourhood, almost every house having its tank or fountain.

The city situated in the eentre of an ampitheatre of hills strikes the eye of the stranger with an imposing appearance of solcmn grandeur, the whole view is studded with mosques and ruins, having all the magnificence of exterior which the mind attaehes to a eity of the east, with also a due proportion of dilapidation, filth and negleet, whieh a eloser view but too generally realizes. It once had a large and handsome bazar called the Shahjung noted for its silks, kineobs, and muslin embroidery; the eity is now going fast to decay and the productions of more propitious times are greatly neglected, its aquaduets are broken, the tanks obstrueted and never cleaned out or repaired, the fine ruins of the palace have been appropriated to purposes of building, that it is now almost impossible to form an adequate idea of its aneient splendour.

A ehaste and beautiful strueture ereeted over the remains of a favorite daughter of Aurungzeeb, after the model of the Taj at Agra, attests the taste, magnifieence and piety of the founder. The walls surrounding the garden are broken and fast falling to deeay, a few years ago a portion of one of the miniarets fell down, the remaining three have since had coarse and rudely constructed walls erected [to prevent a similar disaster] be-

CANTONMENT
of
AURUNGABAD
by
Captn M. Strange
Reference
1. Arsenal
2. Gun Shed
3. Artillery Lines
4. Hospital
Scale 1 Furlong to ½ an INCH
1 2 3 4
City Wall
General Bazar
Infantry Lines
Burial Ground
Hospital
Bazar
Lith by J. Wilkins Supd. Surveyors Office

tween the light and beautiful columns which support their domes. The lofty and magnificent marble cupola over the tomb, is also threatened with destruction from the seed of the ficus indica having germinated between the interstices of the slabs composing it and there struck root, defying removal, this combined with the ruthless hand of time is effectually and steadily exerting its dilapidating influence.

The river Kowlah separates the city from its principal suburb, on the north its bounded by marshy ground of some extent; and on the left, before entering the city by the Delhie gate, there is a large tank which during the monsoon is overgrown with the usual aquatic plants of the tropics, these decaying as soon as the water is drawn off for the irrigation of the rice fields forms a fertile source of malaria during its decomposition, and unhealthy exhalations, hence intermittent fevers are prevalent in the city at all seasons, during the months of May and June, there is less disease than at any other period of the year, the hot winds which prevail during April and May in all probability dispelling the noxious miasm, but the small-pox to a great extent and sometimes cholera to a limited one, make their appearance about this period, proving fatal to many. The intermittents met with in the city are of all types the tertian as usual being the most gentle and the mildest, generally making its appearance after the first fall of rains. Double tertian and quartan the most violent and obstinate. Quotidians generally become tertians, quinine has been found to have specific properties in treating the milder types, unless when organic disease and considerable functionary derangement existed.

In October the bilious remittent shows itself and in December is met with in its most malignant and concentrated state, and has been thought by some to be identical with the yellow fever of the West Indies. From the common bilious attack with fever to the regular jungle

or puckah fever, there are many gradations which depend on local peculiarities, constitutional idiosyncracies; and the state of the atmosphere. The remittent fevers of this place are pretty similar to such cases in other parts of India.

*Cantonment.*—The military cantonment of Aurungabad is situated in the immediate vicinity of the city of the same name, and about two miles distant from it in a south-westerly direction, a range of hills extend on either side at from two to three miles distance with an elevation above the plain of from four to six hundred feet, and the latter (the plain) is said to be about eleven hundred feet above the level of the sea.

The lines of the artillery and two infantry regiments face to the west, having the European officers' quarters, hospital, and bazar in the rear.

The ground occupied by them is comparatively rather high and undulating, and gradually shelves towards the Kaum river which forms the eastern boundary of the station.

*Hospital.*—This is a substantial raised puckah building, in an airy situation, having a tiled roof with a verandah all round at each end, there are rooms appropriated as surgery, dispensary and for keeping stores, the hospital is divided into two wards each 55 feet by 16, and is exceedingly well calculated for the sick of the two infantry corps, company of artillery and details—there is also a tiled guard-room, cooking-sheds and necessaries attached, with every convenience, the whole surrounded by a stone wall.

*Soil.*—The soil around is rich and black, where it is gathered together, being formed from the decomposed basalt, or broken off wack, and contains a great quantity of lime, the rocks that are to be found composing the hills, or

breaking through the soil are basalt, frequently of a porphyritic structure containing small quantities of olivine, hornblend quartz, and calcareous earth. It is frequently amygdaloidal, containing calcareous spar, green earth, clay, zeolite and chalcedony, it decomposes into wack, or indurated clay, grey stone, and amygdaloid, the basalt is in many places found in round masses resembling cannon balls, particularly in the line of hills extending towards Hingolee and Mominabad, the whole rocks are in a state of decomposition, and when exposed for any time to wet and weather it scales off in concentric coats, enclosing a compact nucleus.

In the cantonment of Aurungabad, the larger portion of the surface is covered with mohurrum, isolated patches of light black soil, clay, and limestone intervening. Rock is almost invariably found at a few inches from the surface, the nature of the soil, and the natural slope of the land towards the Kaum river prevents in a great measure any lodgment of water, when that however has proved insufficient, artificial means has been adopted to prevent its accumulation.

*Supply of Water.*—There are nine wells in and near the lines, relative to these wells a singular circumstance occurs, with regard to the different qualities of the water in them, some being brackish, and others sweet, at the same depth from the surface and within a very short distance of each other, which would seem referable to the following cause, the kinds of rock existing where the cantonment is built, is well known to geologists, to be of different species and constantly passing abruptly into each other, the claystone becomes a porphyry, and the porphyry an amygdaloid within a yard, now if in either of the two last mentioned kinds of rock carbonate of lime exists, all the circumstances required for the production of saltpetre are present, and a brackish water becomes the

necessary result, the potash being furnished by the fel-spar of the porphyry and by the mica zeolite, &c. of the amygdaloid.

The Natives always draw an unfavorable augury of the qualities of the water, when in sinking a well, they come upon lime, particularly the carbonate, as a corrollary to this the best chance of finding good water is by boring in the simple rock.

Of the nine wells before mentioned, six are now near-ly dry (April) and the water at all seasons brackish, of the other three, one has an abundant supply, but of an inferior quality, in another the water is good, but does not last beyond the early part of the day, and in the third the water is both abundant and good, the Native population chiefly obtain what they require from a small stream, half a mile in front of the lines and from a well some distance beyond the northern limits of the canton-ments. Europeans procure excellent water from a well in a private compound.

The water in the Kaum river from having previously passed through a suburb of the city of Aurungabad and in the rear of the cantonment bazar, &c. is offensive and quite unfit for any culinary purpose.

*Climate.*—For two-thirds of the year the wind is from the west-south-west; easterly winds generally prevail from the month of November to March, the range of the thermo-meter during these months may be stated at from 50 to 86° during the 24 hours, the alterations of heat and cold being as great as they are sudden, during the hot months the range of the mercury is from 78 to 100°, seldom in the shade being higher than the latter extremes. The follow-ing table is taken from Surgeon Bradley's Statistics of Aurungabad in 1847, to which is added the fall of rain for the year 48, 49 and 51, the latter year being much hea-vier than usual. The average quantity of rain falling one

year with another may be taken at 36 inches, in this part of the Deccan. The rate of temperature noted is perhaps somewhat lower than that of an average season, although during the two last years the temperature has ranged at sunrise for a few days at from 46 to 50. The thermometer placed four feet from the ground and with a northern exposure.

| MONTHS. | Sun Rise. | 9 A. M. | 3 P. M. | 6 P. M. | 9 P. M. | Diurnal Range | WINDS. | RAIN. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 47 | 48 | 49 | 51 |
| January,.......... | 57 | 69 | 79 | 75 | 70 | 22 | E. S. E. | | | | |
| February, ........ | 46 | 67 | 86 | 72 | 62 | 40 | N. E. | | | | |
| March,........... | 68 | 80 | 89 | 82 | 80 | 21 | N. E. | | | | 0·20 |
| April,............ | 78 | 87 | 97 | 87 | 86 | 19 | N. E. W. | 0·12 | | | |
| May,............. | 83 | 91 | 91 | 95 | 90 | 16 | N. E. W. | 5·69 | 0·45 | | |
| June, ............ | 77 | 80 | 85 | 87 | 79 | 10 | S. W. N. W. | 7·85 | 5·47 | 3·97 | 11·70 |
| July, ............ | 75 | 78 | 85 | 83 | 77 | 10 | N. W. | 6·78 | 3·37 | 22·19 | 9·30 |
| August, .......... | 73 | 76 | 83 | 80 | 75 | 10 | N. W. | 2·39 | 5·40 | 5·63 | 9·75 |
| September,........ | 72 | 75 | 79 | 75 | 72 | 7 | N. W. | 18·31 | 0·63 | 12·56 | 0·90 |
| October,.......... | 69 | 79 | 85 | 80 | 79 | 16 | N. W. E. N. W. | 1·0 | 0·75 | 2·92 | |
| November,........ | 62 | 70 | 77 | 76 | 70 | 15 | N. E. S. E. | 1·86 | | 3·94 | 1·10 |
| December,........ | 55 | 74 | 78 | 77 | 73 | 23 | S. E. N. E. | | | | |
| Mean,............ | 67 | 77 | 85 | 80 | 76 | | | 44·0 | 16·7 | 51·21 | 32·95 |

The lines of the cavalry regiment are situated at about a mile in the rear of the eastern boundary of cantonments and are very favorably placed on an elavated spot of ground, which gradually slopes off on either side thus effectually preventing any accumulation of water.

The soil is similar to that previously stated as existing in the other portion of cantonments.

The water required for both men and horses is altogether obtained from wells and the supply is abundant and good.

The country in the vicinity is both stony and poor and only brought under tillage for the monsoon crops.

The entire absence of artificial vegetation, enclosures, or irrigation, tells very beneficially on the health of the

corps occupying these lines which is exemplifyed in a marked manner by the immunity, which the cavalry have hitherto enjoyed from attacks of cholera, during the different periods that disease has so often prevailed, in an epidemic form, in the neighbouring city of Aurungabad and the lines and bazars of the infantry regiments.

The infantry portion of the Aurungabad cantonment is not so healthy as might be anticipated from a review of the nature of the soil, disposition of the ground, drainage, and the absence of cultivation in the vicinity beyond patches of jowaree and bajree. There is also but one small spot under irrigation and that is south of cantonments, a direction from which the wind rarely blows.

The mode in which the small quantity of water in the Kaum river has been divided betwixt the bed and the cut on the bank has hitherto tended to render those living in the vicinity more than usually liable to fever, this, however, will be remedied as General Fraser has sanctioned the repair and extension of a small bund, which will confine the water during half the year to the cut on the bank.

The fences in cantonments are mostly of prickly-pear which is objectionable from the tenacity with which the thorns retain all refuse, and the consequent impossibility of keeping the ground about them clean and open.

The sudder bazar is built on rather low ground, and contains, agreeable to present account, men 1,261, women 1,381, children 1,492. Total 4,142 who inhabit 477 houses.

There is a well supplied weekly market on which most of the inhabitants depend.

The vegetable productions of the gardens are grapes of the finest description, oranges, pumplemose, citrons, limes, mangoes, figs, peaches, apples, plantains, guavas, jamoon, country olive, jack fruit, tamarinds, strawberries and blackberries, in fact almost all kinds of fruits with a variety of melons during the hot season. Pumpkins, cucumbers, sweet potatoes, yams, peas, beans and other Native vege-

tables are procurable to a greater or less extent during the whole year and the same may be said of European vegetables grown in the gardens of officers.

There is a travellers' bungalow in the cantonment, and another at Dieghaum 15 miles off in the direction of Bombay, half way to Toka on the opposite bank of the Godavery river, which forms the boundary in that direction between the Nizam's territories and the Nuggar Collectorate.

There are a line of bungalows lately finished in the direction of Hyderabad, viâ Mominabad, 14 in all; at a distance from each other varying from 14 to 22 miles, they are solid structures, bombproof built, having two rooms to each with a verandah in front and surrounded by a wall, within behind at each corner is a cook-room, bathing place, &c. each room is supplied with a table and two chairs, the bungalow is in charge of a peon who has a sweeper under him, these servants are paid by the Nizam's Government and forbid by order to make any charge or demand for their services; further than for the actual outlay the peon may have been at in procuring from the town, provisions or supplies.

The bungalows were commenced by Colonel Stewart about the year 1833, and brought to completion by the present resident, Lieutenant General Fraser; the work was first carried on by the Pioneers until the abolition of the Corps in November, 1846, after which the remainder were built by contract at Rupees 6,000 each.

*Roads.*—There are no regular constructed roads throughout this part of the Nizam's Dominions, those used for traffic, or by troops and travellers are of the general character, where the soil is of the black cotton or rough and stony, the country being intersected with nullahs, they become nearly impassible in the rains for carts; but in the dry weather are tolerably good, and in the ab-

sence of jungle, at all seasons healthy. The main roads lead to Dhoolia, Ellichpoor, Jaulnah and Hingolee, besides the one previously mentioned towards Bombay.

*Wild Animals.*—The wild animals are those usually found amongst the jungles and ravines of the hilly part of the Deccan, and are tiger, cheeta, hyena, wolf, jackall, several species of deer, wild hog, porcupines, &c.

Lith. by J.W. Kins Supt Surgeon's Office Bolarum

## BOOLDANAH.

The small walled village of Booldanah is situated on an elevated table land, on the Lackenwarra and Adjunta range of hills. It is subordinate to Saklee (Kusbah), and is four miles north-north-east from Davulghaut and 50 north from Jaulnah, in latitude 20° 34′ North, longitude 76° 24′ East.

The height of this extensive Plateau has not been ascertained, but being considerably higher than Adjunta, and appearing more elevated than the Aurungabad hills, (the latter is estimated to be 667 feet above the plain), it may be assumed to be not less than 700 feet above the plain of Berar. Its breadth varies from two to three miles, terminating on its northern side in precipitous falls and in projecting spurs, until it reaches the valley of Berar; and to the southward in a narrow but higher valley, the probable depression of which may be from 150 to 200 feet. This valley is very fertile, and has numerous villages situated on the course of the Paim Gungah, which takes its rise at a distance of about 12 miles westward, and winds its way about one and a half miles from Booldanah.

To the north at a precipitous descent flows a little spring, taking its rise near to the village of Booldanah, and which forms the source of the Isva Gungah in Berar. On the declivity of this, as well as other ravines, and on the north side of the plain, it is somewhat jungly, but it has never been known to be unhealthy.

The climate of Booldanah is salubrious and from its mild dry temperature, pure air, and cool nights, even during the hottest part of the year, is well adapted for a sana-

tarium, possessing as it does military protection and medical aid.

The village contains 374 inhabitants of which 185 are males, and 189 females. There are several wells in it but only one affords good drinking water, which lasts throughout the year when the monsoons have been regular, but otherwise its springs become feeble, and fail to meet the wants of the inhabitants at the close of the hot weather.

The military station at this place, the head quarters of the hill rangers is located on a slight rising ground on the east side of the village, and extends a little way southward. Its limits are marked by boundary pillars and enclose an area of a little more than 214 English acres. —The number of persons in the station is estimated to be 1282; viz., adult males 391, adult females 413, and 478 children.

On the extreme north-north-west side of the cantonment, and near the village, the lines of the cavalry detachment are situated; and about 150 yards on an open space south of this, a Weekly Fair is held. The sites on which the military bazar and hill ranger's lines are formed, are on the east side from this spot, the former being a little more than a hundred yards from it, and the latter 50 yards farther, and extending about 200 yards in the same direction. The lines are placed north and south. On the centre of the intervening space, between the bazar and lines, a Musjid has been erected by the Mussulmans of the hill rangers to commemorate the Mohorum. There are six public buildings in the station, viz., the hospital, barrack-room, solitary-cell, Mahrattah school-room, workshop, and a chowry.

The hospital stands about 100 yards south of the first portion of the lines and faces the north. About 150 yards east, from this, but closer to the lines, the barrack-room is

situated, and the solitary cell about 60 yards further off. The chowry is placed in front of the bazar (south). The school-room a few yards west of the Sub-Assistant Surgeon's house, which is almost in the centre of the cantonment; and the workshop about 100 yards north from this. The Commanding Officer's bungalow and compound occupy the highest portion of ground at this station, on its southern aspect, Dr. Bradleys, west from these, the compounds of both are separated by a milk-hedge. These are the only Officer's houses in the station.

The station is supplied with water chiefly from a well and a tank situated in the vicinity of the village. The water of the former being exceedingly good, is used for drinking and culinary purposes; but that of the latter, though said to be also good, has hitherto never been so employed, except by the Dhairs of the village. From the month of August, the tank water when its muddy particles held previously in solution may be considered to have subsided, might be used at least for culinary purposes until January, but subsequent to that month its daily decreasing water becomes unfit for either drinking or culinary purposes. Invariably the tank water never lasts beyond the middle of April, which is to be attributed to its shallowness. An equal depth of 20 feet through the whole extent of the tank might contain a sufficient quantity of water to last throughout the year. Its dimensions are 124 feet in length, and 109 in breadth.

What has been said of the village well, might be equally applied to the cantonment one, and whenever a failure of water occurs recourse has been had to the small springs which abound in the ravines, especially, in the one near the cavalry lines, in which the late Captain B. Johnston sunk a well, and found sufficient water for the consumption of the troops until the rains had set in. A strong spring exists in the small valley of Jamroon (one of the colonized Bheel villages) which lies a little

more than half a mile from the station. The commanding officer and Dr. Bradley obtain water from it for garden purposes, and during seasons of great drought, the whole station and bazars have drawn their supply of water from this source.

Independent of the military bazar, a weekly market or fair, free from all duties, is held every Thursday in the cantonment, where a large quantity of grains and esculent vegetables, the produce of the circumjacent country, together with a variety of other articles, are brought and sold by Koonbees, Bunniahs, and others. For a better illustration of the above, the different articles sold at the fair, are arranged as follows:—

*Esculent Grains.*—Wheat, gram, rice of an inferior quality, jowarree (holcus saccharatus), bajree (holcus spicatus), rallah (panicum italicum), and a few others, pulses and oil seeds, orud (phaseolus maximus), toour (cystisus cajan), mussoor (ervum hirsutum), moong (phaseolus trilobus), kooltee (dolichos biflorus), kuldee (carthamus tinctorius), ulsee (linum usitatissimum), thillee (sesamum, orientale), ambaree (hibiscus cannabinus), karla (verbesina sativus), &c.

*Esculent Roots and Vegetables.*—Carrots, radishes, onions, garlic, chillies, peas, sweet potatoes, pendalloo (convolvolus battatas), baindee (hibiscus esculentus), karala (momordica carantia), &c. and several pot herbs.

Besides these, lamp oil, jaggery, tobacco, country cloths, dressed hides, &c. &c. comprises a portion.

Fruits, only a few kinds find their way into the bazar, such as guavas, plantains and mangoes.

The fair is invariably well attended, but when a rise in the price of grain is anticipated by the Bunniahs, &c. from any accidental cause, the quantity then brought to it, is inadequate for the weekly consumption of the cantonment,

but the military bazar which is at all times well stocked, supplies the deficiency and removes every inconvenience that may otherwise arise from these contingencies.

The market is principally supplied from Davulghaut, Saklee, Badoola and Chicklee, which are all large villages; the first three are within six and the last fourteen miles off Booldanah.

## HINGOLEE DIVISION.

Hingolee is a Kusbah or market town in the district of Mahore, province of Berar, situated on the north, or left bank of the river Khar, which runs a few hundred yards in front of it.

Hingolee stands in latitude 19° 43′, longitude 77° 9′. It is 247 miles viâ Gunga Kheir from Hyderabad, and 224 miles viâ Nandeir, being distant 60 miles from the former, and 40 miles from the latter place.

It was selected as a military station in 1819, soon after the siege of Nowah, as a more centrical position than the former cantonment of Rissoor, situated 32 miles north west of Hingolee.

*Features of Hingolee.*—Hingolee and the surrounding country, is very deficient in rivers, tanks or reservoirs, for the purposes of irrigation, for which reason little else than dry grain is produced.

The river of Hingolee, is a narrow, shallow stream, running from west to east, in a trap-rock bed between low shelving banks, alternately of black soil sand and schistoswack, it runs a course of 40 or 50 miles and empties itself in the Gungah, a few miles east of Nandeir. During the rains this river presents a vast surface of water, but very shallow, the water rapidly accumulating, and as rapidly disappearing, leaving very little deposit either vegetable or earthy. This river presents many advantages for a tank, on a grand scale, which would be of the greatest benefit to the station.

Shortly after Hingolee became a military station, a large pavement of bricks was discovered about three feet below

Lith. by J. Wilkins. Supg. Surgeon's Office

Bolarum

the surface of the soil, they were about nine inches square and four thick and nearly equal to granite in solidity, these were found about 400 yards from the river and half a mile from the village. Fossil remains have been found in the bed of the Paim Gungah river, which were supposed to be the trunks of a species of trees, either very scare or totally extinct in these parts of the world. Fossil bones of elephants and other large animals, have also been found lying near to the former.

*Soil.*—The soil of the cantonment, is a rich black vegetable loam, in some parts very superficial and rarely exceeding 18 inches in depth, in other parts barely covering a splinterry sort of slaty lime stone rocks of a yellow color, and loose gravely nature, superficially; but becoming more compact, as it is deeper till it rests on a bed of trap associated with amygdaloid and wacke, this is of various depth from four to 14 or 15 feet.

The trap-rock, which is most compact in its nature and the great distance of any high land from the cantonment, render it necessary to dig a very great depth before water is procurable, and this causes artificial means of procuring water very scare, the country itself is naturally barren, a few scattered trees and low jungle wood alone being observable. The plain of the hills is under partial cultivation, the general produce being jowarree and wheat.

The country between the Paim Gungah and the Poornah rivers, including the districts of Mahore and Nandeir, was kept disturbed for several years before, by the depredations of certain Huthkhurree Naick's, Rajah Govindbuxsh, the Soobah of Aurungabad, and brother of the late minister Chundoolaul, having failed to establish order, a brigade of infantry, with a regiment of cavalry, and artillery, under major Elliott, was employed against them, when peace was proclaimed after a campaign of seven months in 1817; during which time many Ghurrees were

taken and destroyed. On the country being denuded of troops during the Mahratta war, the Naicks again committed depredations, and after the return of the troops, the last of the Huthkurree Naick's strongholds, the fortress of Nowah was stormed and rased to the ground in January, 1819. The descendants of the Naicks are now following the avocation of husbandry. For the last thirty-five years, Hingolee has been held in Jagheer, by the family of Raie Chotumlaul, a Munsubdhar (deceased) and who formerly held extensive Jagheers in the Nizam's country, and exercised great influence in its affairs, being connected with the Dufturdhars. The Jagheer is at present managed by his son Raie Ballah Pursadh. Hingolee is a populous town for its size, it contains about 4,000 inhabitants, by a rough computation made a few days since, the greater proportion being Hindoos, and from being held in Jagheer for a continued number of years, and perhaps as much from its immediate proximity to the cantonment, is in a more flourishing condition than towns like it, subjected to the frequent change of Talookdhars.

There are no buildings in it worthy of notice, the streets are narrow, and like all Mahratta towns, it is extremely dirty. Three mud Ghurrees once seemingly strong, but now delapidated, defend the town, viz., the Circar Ghurree, the Bunjarah Ghurree, and Soobhan Roo's Ghurree, standing about 500 yards from each other ; some litigation is going on at the present time, between the Bunjaree's and Soobhan Roo's relations, with respect to certain rights and privileges formerly enjoyed by the parties, and their case is under the consideration of the city courts.

*Revenue.*—A gross revenue, of 12,000 rupees per annum, is derived from the town of Hingolee, and the 16 barrahs, or hamlets under it ; 8,500 rupees only of this sum, reaches the Jagheerdhar, the remaining portion being absorbed in maintaining the village establishments, and pay-

ing the Jowans employed to collect the revenue, and in meeting other incidental expenses.

The immediate site of the cantonment, is on a gently sloping declivity. The surrounding country is undulating, with a small range of hills towards the south and west, about two miles distant. The hills are partly covered with stunted bushes of different species of mimosa, and stones, which give them a barren appearance. The country around is thinly wooded, and there is scarcely a tree of any size. The palmyra trees have been cut down for building purposes. Mangoe trees are scarce—date bunds are to be found in some of the nullahs.

The cantonment is affording accommodation to a wing of cavalry, a company of Artillery, and a regiment of infantry. The lines of the Artillery, together with those of the infantry are situated on the east by north side of the town, half a mile off. About 100 yards from the lines on the left, and close in rear of them, are erected, at short distances apart, the officers' bungalows. Half a mile to the east and back part of the bungalows, on sloping ground, towards a tank, are placed the cavalry lines. The hospital is situated half way between the cavalry and the other lines. The burial ground is at the extreme left of the cantonment. The hospital was built in the year 1829, or thereabouts. It runs east by north, and south-west by south, having its front to the south by east. The hospital is 158 feet long, by 36 broad. It consists of one small and two large wards, made by building across two walls, and measures in length 134 feet, and in breadth 18 between the walls. The front and rear verandahs are each nine feet wide ; the central portion of the rear verandah to the distance of 25 feet is enclosed, forming a bath-room, it has two doors, one opens into a ward, and the other into the verandah, and there is a small square opening in the wall. A dispensary is taken off from the body of the building at each extremity, which is ten feet by 18, fitted

with shelves, lighted by two windows, and entered by a door from the front verandah. The hospital is composed of pucka brick walls, plastered with chunam, in height 13 feet; the pillars in the verandahs are six and a half feet high; the floor is paved with square bricks, raised two feet, except the rear verandah; the roof is 18 feet high to the centre, and is teakwood, and double tiled. The wards are ventilated by three doors, each seven feet by four, placed in front, and ten windows not opposite each other, but at regular distances, each four feet by three, with an inner wooden shutter and each of the rear windows are secured by cross bars. The wards are calculated to hold 54 bedsteads. The hospital is in an open spot, having a few small bungalows in front, separated from it by a large compound. The ground around the hospital is cotton soil. There are three small detached offices as cook-rooms, &c. The whole building is in good repair, and in all respects well adapted to the purpose to which it is applied.

The Arsenal, gun shed, two bells of arms, two magazines, and other public buildings, are composed of similar materials, being substantial and weather proof.

The lines of the artillery and infantry occupy ground nearly half a mile in length, and 150 yards in breadth. The huts have been newly reconstructed, each hut is 14 feet by 12, 11 feet in height in the centre, with a sloping roof, the roof is of thatch, the walls being five feet in height. The huts are laid out in regular rows, and admit of a free circulation of air through them, the drainage in all parts is good, the gutters open, and the roads between are as clean as possible. Close to the front of the lines, are the parade grounds, being a fine open space, having the public buildings in rear for each.

The cavalry bazar and lines extend quarter of a mile north and south, and on the north-west side is the cavalry parade ground. The butts, and escalade battery, are

at the extreme right of the cantonment. The cantonment contains twenty-nine houses including the mess, two schools, poor house, and a traveller's bungalow ; the greater part are thatched, and comfortably built, each dwelling being surrounded by a compound or garden, in which a few trees are conspicuous. There is a garden at Kah-kee-Baba's Mutt, situated on the right bank of the river, containing various fruit trees, and another on the left of the Brigade parade ground, which is filled with the choice fruit trees, vegetables are grown in the cold season in great perfection.

The roads in the cantonment are covered, with a thick layer of moorum, with side ditches. There is an excellent carriage road running seven miles between the bungalows, and thence round the cavalry tank, the bund of which forms a road, producing a smaller circle of four miles, this road is intersected in different parts of the cantonment by other roads, and there are nine bridges thrown over nullahs crossing them.

The quantity of rain, which falls in ordinary seasons is so considerable, and the ground so retentive of moisture, that wells are hardly used for watering the fields.

*Tanks.*—There are two tanks, one immediately opposite the town, and abuting the suddhur bazar, called the bazar tank, and the second near the cavalry lines, called the cavalry tank, both retain water throughout the year, except in seasons of draught.

*Wells.*—With the exception of the Scindhee Boury, as it is called, and two wells in the bed of the bazar tank, which supply abundance of good water, eight or ten others sunk by Government on the first formation of the cantonment, are not to be depended upon. They are almost always dry in the month of May, when people resort to the

river, for the purpose of procuring good water from pits they dig in the bed of the river.

*Harvest.*—The harvest is divided into two seasons, or rather periods, viz., the Khurreef and Rubbee. The wet and dry harvest. The sorts of grain are taken in the order of their ripening, as follows:—

*Khurreef or Wet Harvest.*—The mukkai kee jowarree, toor, oorud, and moong kee dal, tillee, kurrur, dhadree jowarree, bajree, kungnee, khooltee, umbadee, arundee. Cotton is also sown, but not in any quantity, a coarse cloth called khadee is woven from it—the quantity sown about Hingolee is scarcely sufficient to supply the wants of the people. It is brought, consequently from the Nursee, and Cullumnooree talooks. Native dealers in the town of Hingolee sometimes buy it up from the surrounding districts to send to Bombay. Rice is cultivated to a certain extent on detached spots, which lie conveniently for water, but the quantity is small and can scarcely be reckoned among the crops, that which is sold in the market is chiefly brought from the district of Nirmul Rubbee, or dry harvest. Wheat, gram (chenna), lakh, and mussoor kee dal, peas, ulsee, gunna, and tobacco.

*Traffic.*—There is little trade carried on at Hingolee. The principal articles of export are ghee, chenna, wheat, and oil, which is collected from the adjoining districts, both by the dealers in the military bazars through their agents dispersed in the country, and by the dealers in the town, and sent off in large quantities to Ahmednuggur and Bombay, by the former description of dealers, the trade is clandestinely carried on, to the detriment of supplies to the troops, and prices of all sorts of grain, ghee, &c. have within seven or eight years risen considerably. Poppy is also sown in December to a certain extent near wells. The quantity of opium produced, is small, so much

so, that it does not form an article of export. It is adulterated after it gets into the hands of the Marwarree dealers, by mixing the powder of the dried leaves and ashes to increase its weight.

Bullocks, cows, and buffaloes are plentiful and sold cheap. Good sheep are procurable in the neighbourhood. Poultry of all kinds are reared in the villages by Pardees, who bring them for sale.

*Seasons.*—There are three seasons—the cold, the hot, and the rainy season. The first from the middle of November, to the middle of February, when the hot season commences, and lasts to the end of May. The rains beginning to fall early in June, and end about the middle of September, lasting sometimes to the end of the month. The month of October is sultry and disagreeable. In the months of April and May, the winds are hot, the Thermometer exposed to them rising to 100° and 110°. The heat varies after night fall, and from nine o'clock P. M., it begins to cool. The mornings, up to seven or eight o'clock, are comparatively with other stations cool. From the 18th to the 25th May frequent squalls take place, attended with thunder, lightning, and rain, producing a temporary coolness, but before the end of the month, the morning heat is great; on the 4th or 5th of June the rains may be said to have set in. The quantity of rain falling during the season, one year with another, being:—

| | |
|---|---|
| May,............ | 2 or 3 Inches, sometimes more. |
| June,................ | 4 |
| July,... ............ | 10 |
| August,.............. | 15 |
| September,.... ....... | 4 |
| Total.. | 35 Inches. |

After the rains terminate, the mid-day, and afternoon heat increases until about the 15th of November. The

mean range of the Thermometer during the hot season, is from 83° to 94° in the shade.

The prevalent winds are from the south-west, and the north-east.

*Cholera and Small-pox* generally appear in the months of April, May and June, sometimes earlier. In some years they rage with severity. Towards the end of the rains, agues, and remittents, chiefly prevail among the native community.

*The Climate of Hingolee* is supposed to be favourable. It is in this point inferior to none of His Highness, the Nizam's cantonments. It's distant from Hyderabad 221 miles. The nearest large towns are Nandeir, Oomroutee, Mominabad, Jaulnah and Aurungabad.

CANTONMENT
of
ELLICHPOOR
by
Captn. W. Strange
Proposed site of
New Infantry Lines
To the City
Magazine
Main Guard
Artillery
Parade
Infantry
Parade
Infantry
Lines
To the City
Poor House
Hospitals
Sudder Bazar
Cavalry Bazar
Cavalry Lines
Cavalry Parade

## ELLICHPOOR DIVISION.

The Ellichpoor cantonment is placed on both banks of a small river, named Sampam* about 21° North latitude and 77° East longitude, with an elevation, according to Colonel Waugh's measurement, about 1,300 feet above the level of the sea. This small river coming from the mountain range to the north of the cantonment, is sometimes swollen to a rapid torrent, and at other times it is nearly dry. Both banks of the river are almost flat, like all the other parts of the neighbouring valley of Berar, admitting of no proper drainage of the Sepoy's lines or cantonment. This circumstance of the water lodging in the black cotton soil, and the bad situation of the cantonment in general is more severely felt, from the cool air being excluded by the range of hills on the north, which is at a distance of about four miles from the cantonment. It is as well to make a few remarks on these hills, which have such an influence on the climate of this place. The base of the hills in this direction appears to be chiefly of sand-stone with lime-stone superimposed, both being sedimentary rocks, are regularly stratified, and are more or less elevated and thrown out of position by the up heaving of the trap rocks, of which these hills are chiefly composed. This picturesque range of hills is allowed by all to exercise a pernicious influence on the climate of this place, particularly during the monsoon, preventing a free circulation of air, to carry away the malaria, which no doubt then prevails, from the great number of fever cases that occur at that season of the year. In a country of a cotton soil in the

* It joins the Ellichpoor Nullah at the City.

vicinity of a range of hills and consequently so liable to be cut up by a multitude of mountain streams, it may be imagined that no site for a cantonment more eligible could be chosen—but this is partially the case and applicable solely to the latter circumstance. For with all black soils whatever be their substratum there are invariably associated banks (if we may use a marine phrase for what appears by every sign to have been subaqueous) of calcareous tuff of greater or less extent; these tracts, when they exist, unite the advantage of slight elevation with its concomitant dryness of surface to the cause by which they have been produced, a much smaller capacity for the absorption and retention of moisture than is found in the black soil.

The calx also containing a small proportion of magnesian earth, the vegetation of such spots is much less luxuriant than that of the surrounding country.

Such sites and those too fitted in extent, and every other circumstance requisite for a cantonment, are to be found in the neighbourhood of Ellichpoor, of these the more remarkable are, one at the village of Burgaom, six miles to the east of Ellichpoor, and another at Chumuk, eight miles to the south; the latter was the encamping ground of General Doveton's force in 1818-19.

The cantonment is admired for its appearance from the refreshing perpetual green foliage on the trees, the Sepoy's lines are situated on the right bank of the river, a short distance behind the officers' bungalows; they are found fault with from their defective construction, and improper drainage, these faults are, at present, proposed to be remedied as far as practicable. The cavalry lines are situated on the left bank of the river, a little higher up, and more elevated than the infantry lines. The hospitals are placed close on the left bank of the river, opposite the infantry lines, and having the bazar between them and the cavalry lines. The staff hospital is of a very superior construction.

The two infantry hospitals are under one roof, and badly constructed of unburnt bricks and mud, and no elevation.

The bazar has an imposing appearance, having wide streets with lofty buildings on either side, and a gay array of shops, and it has rather a clean appearance. There is a drive in the immediate neighbourhood of the cantonment for the families to take air and exercise. The roads are as good as the bad gravel from the mountain torrent will make them, but two limited in extent.

*Climate.*—During the month of January, easterly winds prevail, they seldom blow from the same point for many hours together, but keep shifting from the north-east to the east; the greatest cold being perceived when they blow from the latter direction, these easterly winds bring severe weather, when, however, as is sometimes the case, the north-west is the quarter from whence they blow, the sky is over-cast, and rain falls, and a week's continuance of westerly winds at this season terminates in high gales and storms.

The Thermometer is sometimes as low as 53° at sun rise and seldom rises above 80° in the shade during the day.

*February.*—At its commencement, differs little from the preceding month in its weather. The winds continue north-east and east, but towards the close, the heat becomes greater and the winds stronger, and at mid-day, a hot wind is sometimes felt.

The Thermometer is not under 60° this month, and at noon rises to 85° and even to 88° Fahrenheit.

*March.*—Winds continue for the most part easterly till the middle of the month, when strong gales from the north-west accompanied with thunder and lightning, and followed by heavy rain or a hail storm, usher in the regular hot weather.

The Thermometer at the beginning of the month sinks,

on rare occasions, to 62° at sun-rise, at the end it rises at noon to 100°.

*April.*—Hot dry weather, winds during the day hot; particularly when blowing from the north-west their most constant quarter. The atmosphere becomes dull and hazy, and the plain seen from a height seems covered with a yellowish mist. This dimness is attributable partly to the air being charged with a quantity of impalpable dust, and partly to the all but total abstraction of moisture from it.

Thermometer 78° to 80° at sun-rise, and at noon 100° to 102°, rain rarely falls this month.

*May.*—This is as is common throughout India, the hottest month. The hot winds blow from the north-west and do not intermit till hours after sun-set, and the lulls which sometimes occur are fully as insupportable as the hottest wind.

The utter dreariness of the landscape during this month cannot be equalled, there is nothing to relieve the wearied eye from resting on the parched earth; and every thing calls to mind the fearful curse of Scripture, "The heaven that is over thy head shall be brass, and the earth that is under thee shall be iron." Towards the end of the month, clouds collect from the west but rain seldom falls.

Thermometer at sun-rise 84° to 90°, at noon 106° to 108°, in the shade of a verandah.

*June.*—The wind becomes more westerly and occasionally blows from the south-west.

The close suffocating atmosphere experienced just before the setting in of the monsoon is the most trying and insufferable of all weathers. The clouded sky during the day intercepts the suns rays, and there is thus less of burning heat and glare; but to compensate, it prevents radiation during the night and leaves the black soil to give out its heat to the lower stratum of air by conduction.

Little relief is experienced from the partial showers

which usually precede the monsoon, and it is only after a good fall that the air becomes permanently cooler; yet very often it continues sultry and oppressive, with an occasional gust of hot wind.

The Thermometer after a heavy fall sinks to 75° or lower, in the hot close weather it has been noted at 100° Fahrenheit an hour after sun-set.

*July.*—During this month the winds are west and south-west, yet occasionally there are blasts from the north-west with heavy falls of rain, attributable to the relative position of the hills; that constancy observed on the sea coast with respect to the direction of the monsoon winds, does not obtain in the interior where inequalities of surface are continually occurring to divert the currents of air from the course they acquire at their origin.

The Thermometer this month becomes limited in its range, the lowest average may be quoted at 76°, the highest 86°.

*August.*—There is little variation of the weather or temperature of this month from those of July. Rain continues to fall, and during its intermission it is pleasantly cool.

Thermometer nearly the same as last month.

The low mists during this and the preceding month resting during the morning on the sides of the mountains, or bridging the gorges have a stricking and most picturesque appearance.

*September.*—Symptoms of breaking up of the monsoon are shown early this month by a greater interval betwixt the falls of rain. A storm from the north-west before the end is the more immediate harbinger of its termination. The sun gets very powerful and a hot wind is sometimes experienced at noon, when there is a great intermission of rain; but the night, as is the case at Ellichpoor after the setting in of the monsoon, is cool and pleasant.

The Thermometer may be quoted at 75° at sun rise, 88° at noon. Winds north-west and west.

*October.*—Fogs in the morning, giving a chill uncomfortable sensation, are prevalent; the heat is sometimes great during the day reaching above 90°; winds north-west and west, towards the end of the month north-east and east.

*November.*—Rain is common in this month, but the showers are slight and passing, the north-east winds begin to prevail, and the mornings are felt cold and bracing. Thermometer 65° at sun-rise, at noon 85° to 90°.

*December.*—This month resembles January so closely that the same remarks on climate and temperature are applicable to both in a general way. The average fall of rain at Ellichpoor may be said to be thirty-five inches. These observations on climate are not to be concluded without observing how impossible it is to give, by a quotation of prevailing winds and average temperatures, a full or adequate idea of the matter in question; for regular though the seasons of tropical climates are in comparison with those of temperate regions, more incongruities exist in the direction of winds, quantities of rain fallen and times of falling then are sufficient to give every general sketch a character of imperfection, and as applicable to each individual season of error.

*Geology, Mineralogy, &c.*—The cotton soil of Ellichpoor rests in all probability on sand-stone as that rock appears four miles to north, and again in the channel of the Chandah Bagha river, six miles to the south of cantonments where it is quarried for the purposes of building. This sand-stone from being associated with red-marl, a bed of which is laid open by one of the nullahs issuing from the gorges of the hills to the north and in their immediate vicinity, would seem to belong to the class called by McCulloch superior sand-stone, no organic remains have yet been

found in it but it would appear a promising field for such discoveries, as in its age and site it resembles the sand-stone of Central India which has yielded many fossils of interest.

The sand-stone has every appearance of being disturbed by the eruption of the volcanic rock in its vicinity, the strata being elevated and when in immediate contact much hardened, in other parts it is of every colour and consistence from a fine grained stone to a coarse breccia, while its colour ranges from a dark purple to a dingy white.

Lime-stone is also found in the same quarter, it is converted into chert when in contact with the trap-rock and is generally a very hard and close-grained stone with an appearance of crystallization.

The over lying rocks which form the mountain chain are made up of several members of that family, the principal are clay-stone, amygdaloid and indurated clay, the latter porous and schistose is met with at the base of the hills ; the minerals found in the amygdaloid are coarse agates, jaspers, heliotropes, crystals of carbonate of lime, green earth, zeolites, &c., the latter so abound as to give the rock such a character that it might be named zeolite amygdaloid.

Fossils were discovered at Gawulghur, fifteen miles distant from Ellichpoor, in this range by Dr. Voysey.

Besides the regur and kunkur soils, of the former of which several varieties exist, in the immediate vicinity of villages a whitish soil is found, the origin of which would seem to be as follows:—In erecting their villages, the Natives would naturally choose calcareous earth for hut building as best adapted for sustaining the effects of weather, from its superior adhesive quality and lower power of retaining moisture.—From the constant contact of animal substances, in progress of time, a nitrate of lime of potass would be formed, in which case the cohesion of the particles of the mud would be lessened, the capacity for ab-

sorbing and holding water increased and its adaptation for building purposes in consequence much impaired. A fresh supply of calcareous earth would be required, to make room for which it would be necessary to clear away in part the now useless material; in this way it has found its way to the neighbouring fields adding little to their fertility and less to the salubrity of the village.

Water is found at the depth of twelve or fourteen feet in the Ellichpoor camp, it is of excellent quality.

*Vegetable Productions.*—The champaign country about Ellichpoor is diversified with topes of mangoe and tamarind trees, on the hills the teak (tectona grandes) grows to a great height and yields valuable timber. The butea frondosa is also abundant on the branches of which lak is deposited.* The bassia latifolia† (mahwah tree) is common and the spirits yielded by distillation from the flowers are very abundant. The nullahs have their banks covered by the elate sylvestris† (scindee) and the euphorbia strikes its root in the driest and stoniest situations. A species of canthium and the vitex negundo (shumaloo) are seen in the beds of the mountain streams.

The grains and legumes cultivated near Ellichpoor are

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* The Gonds bring in the stick lak but the supply is limited by the demand which is very trifling, there is no attempt made to separate the dye, not an ounce of which is sent to Bombay.

† These two trees with the Palmyra Tod are to be considered of the first importance in a Sketch of Medical Topography, for no care can prevent European soldiers from getting at ardent spirits in countries where they are distilled or in other words where these trees grow. A certain supervision will check in a considerable degree the supply and sale of spirits in the bazar, but no cordon (however strict) will exclude the Collectors and Distillers of fermented juice who are ever the lowest and most needy of mankind from finding a market for their produce. The first question to be asked in the selection of an encampment for European troops should be:—Do trees, yielding fermentable liquor, grow in the vicinity? for all experience shows that if in tropical climates, climates destroys hundreds of Europeans, arrack and its preparations destroy thousands, much error exists regarding the salubrity of different localities by not giving its full weight or importance to this most notable source of disease.

very numerous. The Khurreef crop consists of bajrah, holcus spicatus in small quantity, holcus saccharatus (red juary), panicum sativum (rawlah), paspalum frumentaceum (kodow), of legumes phaseolus acontifolius (moot), and several other species of phaseoli, the pods of which are eaten sometimes as pot herbs.

The rubbee crop comprehends of grains, wheat (triticum) of several varieties. Barley (hordeum distichon), of legumes pisum sativum (pea), cicer arietinum (gram), besides linum usitatissimum and crotalaria juncea, flax plants.

The various oil plants are also cultivated. Carthamus tinctorious (kosumbo), verbena sativa, on the hills sesamum orientali (tillee), the two latter belong to the Khurreef.

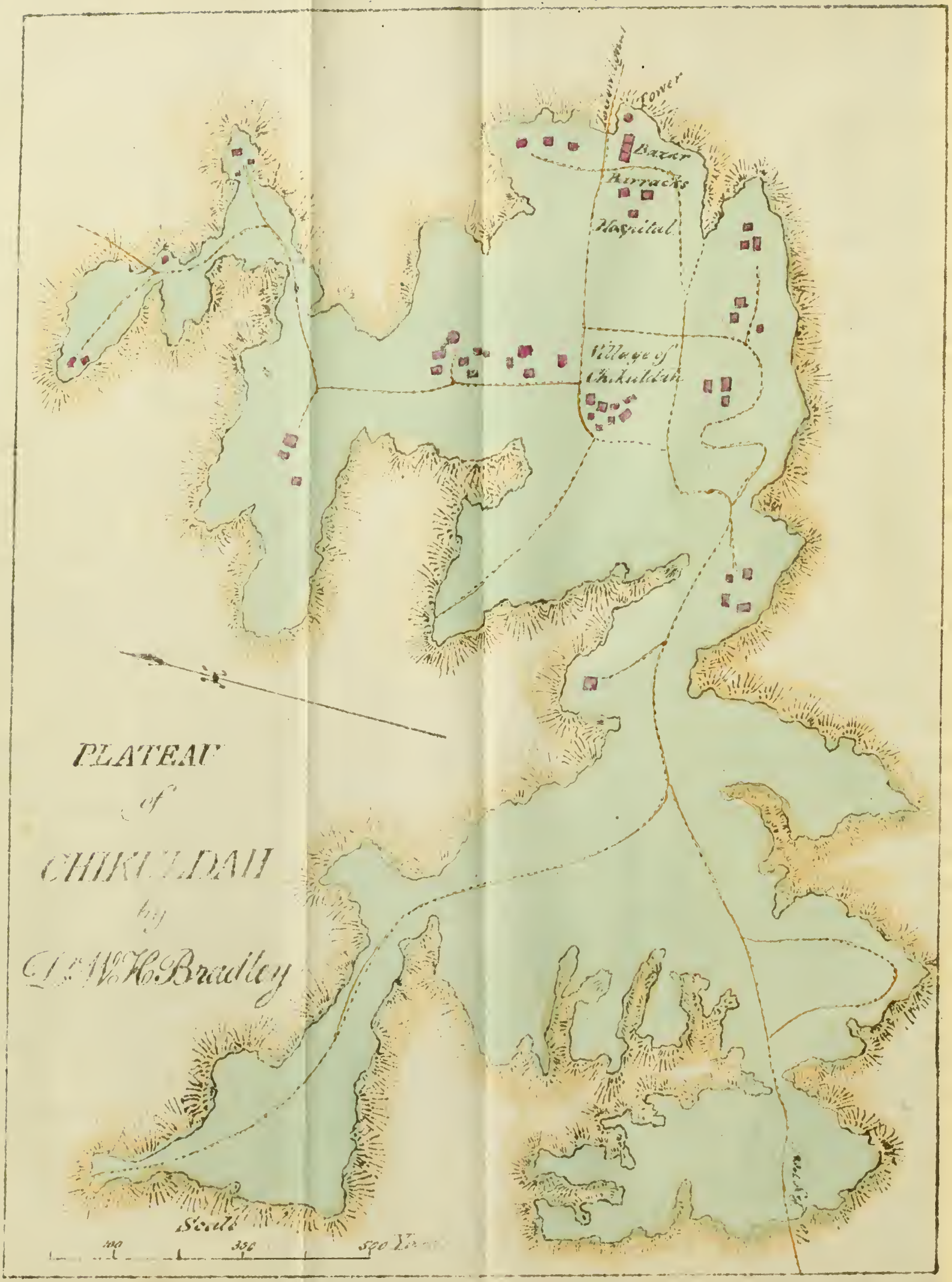
Cucurbetaceous plants are cultivated in the rains and cold season, the potatoe is small and watery, but the yam is excellent, melons grow plentifully in the nullahs in the hot weather; the various plants used as condiments are produced and some edible roots, the chief of which is the carrot.

The greens are of amaranthus various species, the beta bengalensis (palunka), the basella alba et rubia (poeca), the trigonella fœnum grœcum (maethœ), anethum sowa (dill), of portulacca (koolfa), two or three species, the common people also use the leaves of several species of jungle plants as greens, and in seasons of dearth almost every vegetable that is not poisonous is eaten, the many grave diseases which are ever the sequel of famine owe, in all probability, much of their severity to the use of such unwholesome articles of diet.

Of the fruits besides the mangoe and tamarind there are oranges often sweet and well flavoured, grapes always indifferent, plantains, pomegranates, guava, mulberries and others of less note.

*Cotton* is the great staple of the Berar valley and sugarcane is extensively cultivated in garden grounds.

*Food.*—The Mahratta peasant of the Berar valley is of a darker hue than his brethren to the westward, whose activity and enterprise, he but sparingly possesses his fare, is homely and meagre; consisting in ordinary occasions of dhye and bread made of the coarser grains of the country seasoned with capsicums and with salt, obtained from the Dyandah and Akote-pergunnahs 40 miles off to the westward, the salt is manufactured by solar evaporation, the springs lying at a depth of 90 to 95 feet from the surface, and as the level of this part of the Deccan is upwards of 1,300 feet above the sea, it is clear that these springs can in no way owe their origin to the ocean and the most probable supposition is, that a large deposit of rock salt lies below the deep bed of yellow clay in which the water is first found (at the depth above described), when drawn it is perfectly pure and clear and resembles sea water in taste, its specific gravity being 1,023, in the Dyandah-pergunnah there are 18 places where salt is manufactured, two in the Akote and to the eastward six more. Cajaghur, the last place, being 15 coss distant; thus showing that these springs extend for many miles and either owe their origin to fresh water springs rising in the neighbouring Gawilghur range of hills (or water filtering from the rivers) passing over the bed of salt which might easily be ascertained by boring, and if found to owe their origin to the first cause, artesian wells readily be formed and any quantity of salt manufactured.




Lith. by J. Wilkins Supg. Surgeon's Office

Bolarum

## Chikuldah.

Chikuldah is situated on an undulating table land near to and somewhat higher than the Fort of Gawilghur, according to Hamilton's Gazetteer, this latter is situated in about latitude 21° North, and longitude 77° East, and by the measurement of Colonel Waugh of the Great Trigonometrical Survey, the height of the Gawilghur Fort above the plain is 2,300 feet, thus it will be 3,600 feet above the level of the sea; since according to Colonel Waugh this part of the Berar valley is 1,300 feet above the sea, Chikuldah is on the Vindhya or as some call it the Gawilghur range of hills, and is about 20 miles from the cantonments of Ellichpoor.

The plateau of Chikuldah is not above three quarters of a mile broad, and about a mile in length, but though thus limited in size, it has easy access to the surrounding table lands and valleys, that renders its contracted space of little moment. The form of the plateau in outline, when viewed from the west, bears a fanciful resemblance to a Map of the British Isles. The cool breeze which prevails at the Sanitarium during the hot months is a proof that the elevation must be considerable, and many invalids can bear testimony to the sudden relief they have experienced there from the suffocating heat usual at Ellichpoor during the hot months, Ladies and Children in particular seem to derive much benefit from the place. The varied and extensive scenery commanded from this elevated spot is both graceful and romantic, exhilarating the mind by the grandeur of its precipitous ravines with their bluff fronts and bold projections. The more gentle scenery of a vast sylvan tract, is seen trending away towards the north,

covered with high grass and forest trees, in a series of undulating steppes, all connected one with another, and diminishing in altitude as they recede: embosomed amidst which are lying innumerable verdant and secluded valley's. Good roads have been made along the irregular plateau commanding fine views of the neighbouring most picturesque country, and giving every facility for taking air, and exercise, without the fatigue of wandering in the jungle or descending into the deep ravines near which the roads pass.

As the slope of the mountains inclines towards the north, a more pleasing character presents itself in this direction, than towards the south, where the face of the mountain stands denuded as a bold, precipitous, and cliff-like barrier, admitting only at intervals, of winding pathways, steep, and difficult of ascent, up its craggy front. It was through some of these passes, that the first Moslems penetrated into the Deccan, led by the enterprising, but murderous Ala-a-Din, of the house of Khilge. Upon the south, the whole valley of Berar is seen spread out beneath the gazer's feet, during the hot months, it is generally shrouded in a sullen looking mist, that seems to hang oppressively over the valley, but when the air is clear and bright, as at other periods of the year, the extensive champaign of Berar is seen across its entire breadth, and sometimes far beyond the hill fort of Mahore being at times very distinctly visible.

The only organic remains observed in the various formations of which this range of hills are composed, have been a species of encrinites (found upon the highest summit of the range), four miles west of Chikuldah: the whole mass was seen converted into a substance resembling jasper of a roseate hue, and some tubuli of a species of molusca apparently a variety of clavagella, discovered in the centre of a flinty agate, upon being broken by the hammer; these were both found near to each other, at the

foot of a conical hill, around which silicious minerals of all kinds abounded.

At the eastern extremity of these hills, close to Bhyram, a large bed of lacrustine fossils exist which are precisely similar in character to those so ably described by the late lamented Dr. Malcolmson, in his memoir upon the lacrustine deposits of the Basaltic districts.. Their site is a slight slope, or terrace on the slides of the mountain occupying an elevation many hundred feet above the present level of the plain. The road leading to the pass, marked in Arrowsmith's Map as the Kurridgegaum pass, but called by the Natives, the shepe (Query, seep ?) pass, proceeds directly through the centre of the bed in which they lie scattered, and disruptured around, after leaving the plains, this road leads first across a series of sand hills, whose variously inclined strata evidence the fact of violent disturbances having occurred, then passes over a level of tofacious limestone, and crossing a nullah, ascends a range of hills composed of nodular basalt, on the summits of which the fossils lie, all within a space not exceeding 200 yards square. The shells bear marks of having been subjected to an intense heat, as well as pressure. Sometimes they are found entirely decomposed, nothing but a cast remaining in the indurated mass, in others, the shell has changed into chalcedony, or silicious matter, transparent as glass, but more frequently they are found assuming the nature of the involving *Rock*. The matrix is an indurated clay, altered by heat to a variety of substances as chert of a pale reddish color, or horn-stone beautifully variegated with opalline figures of small shells, or a dark grey rock, that slightly effervesces with acids or again a bluish or light brown slaty clay. The most prevailing shell is the physa prinsepii, in chert and slate clay, in which latter matrix, they were found most abundant, the paludinæ, and melaniæ. Limneæ were not so frequent, unio, were very common, as well as a species

of cypris, bones, teeth of fish, fragments of stems of reeds, grasses, equiseti, and charred wood, were frequently observed. Though many shells were compressed without fracture, still there were many that bore this mark of violence presenting the appearance that a weak resisting shell would do, under the pressure of the foot, between the comminuted portions of the crushed shell, a thin concretionary line has risen up, that confers a peculiar appearance upon the fossil. These shells have been assigned to fresh water species, perfectly extinct in the present day, and not to be found in the adjacent rivers and tanks.

Fossil bones of the larger mammalia frequently occur in the plains below these hills, as well as silicified stems and trunks of palms, but these are in no way connected with the periods of the lacustrine deposits, just mentioned, but may be referred to times comparatively of very recent date. In the bed of a nullah, two miles north-east of the cantonments of Ellichpoor, the rains have undermined its banks, which have fallen and exposed a large mass of cemented gravel. In it were seen the portion of an elephants skull, and part of a large hollow bone, as well as stems and trunks of palms, the whole of whose original structures had completely undergone a transformation into carbonate of lime.

Though the soil upon these plateaux at present, is found to be sterile, and unprofitable, to the husbandman, yet nothing is wanting but irrigation to change this character into one, the most productive.

The expense of forming tanks similar to a large one now seen in ruins near Chikuldah, would be amply repaid by the value of the productions that might be grown. Many ravines afford easy means of securing a plentiful store of the monsoon, by extending dams across their outlets, and so permitting the waters being meted out as wanted, over the adjoining surface.

Though the soil of these plateaux is sterile, the valleys from being better supplied with moisture are abundantly luxuriant, in many places profusely so. Plants are there seen that are no less prized for their virtues as food and medicine, than as being well adapted to all the general purposes of domestic economy. A new appearance begins to present itself in the vegetable world, evidences of that mysterious organization, that is found adapting itself to every geographical position. Ferns, maidenhairs, air-plants, lichens, mosses and orchideous plants indicate a milder and more humid atmosphere, perhaps this inexplicable and most undefined adaptation of the laws of vegetation, is no where better exemplified than in the case of the clustering climbing rose, that in the plains is never seen to blow, running there luxuriously to stems and leaves, whilst on these heights, its tendrils bow down with the weight of its lovely mignon boutons. In such a climate by a judicious adaptation of localities, it is very probable that most of the valuable productions of the east, might be made to flourish, including the nutmeg, clove, cinnamon, coffee, pepper, cardamoms, pimento, vines, olive, hop, tobacco, indigo, rice, sugar-cane, not excepting even the tea plant, premising as a matter of course, the measure of irregation be provided, which have been pointed out as being feasible, and to be accomplished at a cost, insignificant and trifling, compared to the advantages held out. The greatest part, if not the whole of the valuable productions, just enumerated, were found to succeed in the experimental gardens first established in our great western colonies at St. Vincents, on the sides of the liguani mountains, the elevation of which exactly agrees with these heights, whilst the powers of vegetation are here not too severely taxed by exhausting heats, they are neither on the other hand, subjected to a sudden or severe degree of cold, but just of sufficient duration, and intensity, that will restore to the plants those energies, that the stimulus of the hot and

wet months, may have weakened. The only cereal grains cultivated are a small millet, called by the natives koodaka (paspalum scrobiculatum), and wheat, the former bearing very minute seeds, but affording a very agreeably tasted and nourishing diet, the latter looking very light, poor and flinty.

To see the beauty of these ravines and valleys they should be visited in the summer months, when the rising sap has changed their previous sober tints, into bright and odour breathing parterres: nothing can convey to the mind the excessive beauty of these scenes at such a period. Stately forest trees, as well as lowly shrubs are all bursting into flower at once, mixing blossoms of every hue and tint in lovely contrast, with fresh green leaves, for nearly the whole forest sheds its foliage, and it is now being renewed. In the cold months, the floral world reposes; little variety is then seen: amongst its few gay flowers, are those of the downy grislea, the sweetest of all being the clematis gouriania, whose odour hangs on every hill, where it is seen entwining its leafy tendrils from bush to tree, in snowy wreaths. As the rains approach, the Orchideous and Polypodaceous tribes spring into life; and after they have set in, the ravines become completely changed in character; numberless creepers shoot forth, and scitaminious plants, and lillies throw out a rank, and vigorous vegetation. Thus throughout the several changes of the seasons, a completely new and altered character is given to vegetation, conferring the most pleasing variety, to the aspect of these hills.

The Indian Bison, "bos gaurus," or as he is more significantly termed by some, "bos cavifrons" ranks foremost in order of importance; this truculent and savage animal roams in savage freedom amidst the thickests of the ravines, the high grass of which, gives him ample covert: he differs essentially from the bubuline and bovine species, by the amplitude of forehead which is peculiarly arched, and elong-

ated, giving greater extension to the frontal sinuses, thereby causing his bellow to be deep, and solemn, and also by the breadth, and comparative shortness of his formidable horns. From his intuitive watchfulness against surprise, much tact is requisite to get him within rifle range.

Potatoes and peaches thrive well at Chikuldah, the former being planted at the beginning of the rains. For general gardening, however, there is a deficiency of water, but enough at all seasons for culinary purpose and for drinking, from some fine springs near the station.

The only period that has come under Meteorological Observations, has been from November, to the end of June, a total of eight months, whose mean temperature was found to be 71°. The hottest months were April and May, giving a mean of 83°. The coldest months were January and February, having a mean of 59° thus producing between the hottest and coldest months, a range of 24°. The coldest day observed, was the 9th of February, at sun rise, being 47°. The hottest day noticed, was on the 27th April, at two P. M. being 96°. Between the extremes of heat, and cold, there was therefore a range of 49°. The greatest monthly range was 14° in November. The greatest diurnal range was 22° in April and May. The least diurnal range was 4° in February and 5° in June.

The wet Bulb Thermometer during the hot months, had an average depression of 10°.

The Thermometer averaged a general range of about 10° below the temperature of Ellichpore.

*Abstract of Thermometrical Observations simultaneously made at*

| | | CHIKULDAH, | | | | | | | | AND ELLICHPOOR. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | THERMOMETRICAL RANGE. | | | | | | | | THERMOMETRICAL RANGE. | | | | | | | | |
| | MONTHS. | *Monthly Range.* | | *Greatest Range in 24 Hours.* | | *Least Range in 24 Hours.* | | | | | *Monthly Range.* | | *Greatest Range in 24 Hours.* | | *Least Range in 24 Hours.* | | | | |
| | | Max. and Min. | Range. | Max. and Min. | Range. | Max. and Min. | Range. | Mean. | Mean Depression and Wet Bulb. | Prevailing winds. | Max. and Min. | Range. | Max. and Min. | Range. | Max. and Min. | Range. | Mean. | Mean Depression and Wet Bulb. | Prevailing Winds. |
| | | ° | ° | ° | ° | ° | ° | ° | ° | | ° | ° | ° | ° | ° | ° | ° | ° | |
| 1843. | November,........ | 74 60 | 14 | 74 60 | 14 | 73 62 | 11 | 67 | | S. W. | 86 52 | 34 | 86 54 | 32 | 83 72 | 11 | 69 | 65 | N. W. |
| | December,........ | 72 54 | 18 | 68 54 | 14 | 68 60 | 8 | 63 | | N. W. | 82 50 | 32 | 82 56 | 26 | 78 68 | 10 | 66 | 60 | N. E. |
| 1844. | January,......... | 73 50 | 23 | 69 54 | 15 | 65 55 | 10 | 60 | | S. | 83 50 | 33 | 77 52 | 25 | 77 63 | 14 | 66 | 63 | N. W. |
| | February,........ | 71 47 | 24 | 71 59 | 12 | 63 59 | 4 | 69 | | S. | 91 56 | 35 | 89 62 | 27 | 73 67 | 6 | 73 | 66 | N. W. |
| | March,........... | 91 61 | 30 | 80 61 | 19 | 76 68 | 8 | 76 | 71 | S. W. | 102 67 | 35 | 97 70 | 27 | 91 79 | 12 | 84 | 76 | N. W. |
| | April,........... | 96 71 | 25 | 96 74 | 22 | 94 81 | 13 | 83 | 73 | N. | 106 78 | 28 | 106 84 | 22 | 98 86 | 12 | 92 | 79 | N. W. |
| | May,............. | 96 71 | 25 | 96 74 | 22 | 91 81 | 10 | 83 | 72 | N. W. | 107 84 | 23 | 104 84 | 20 | 100 90 | 10 | 95 | 84 | N. W. |
| | June,............ | 91 67 | 24 | 91 76 | 15 | 76 71 | 5 | 78 | 74 | N. W. | 103 78 | 25 | 96 78 | 18 | 86 81 | 5 | 90 | 84 | N. W. |

The rains cease about the middle of September, heavy dews then occur until the cold weather begins, and also from February to the rains. At this period the moist atmosphere is bright and transparent, but becomes hazy, as it gets less dense towards the hot weather.

The Fort of Gawilghur where officers formerly used to resort for the same purpose, as they do now to Chikuldah, is situated in a direct route fourteen miles from the cantonment and is ascended by two ghauts, the long and short, the latter commences on the south side at an old garden at the foot of the hill called the Imlee Bagh, the ascent is steep and up the face of it, travellers on foot can only ascend. The other ghaut more circuitous and from three to four miles in length passes round by the west and you enter through the lower fort, by this road elephants, and guns can pass. The fort is said to be 2,300 feet above the plain and 3,600 above the level of the sea, and although there is very little if any difference in the altitude or temperature between Chickuldah and Gawilghur yet the former possesses advantages from its locality over the latter; being better supplied with water, picturesque, and beautifully wooded. The fort is quite in a dilapidated state and the only interesting object now remaining is the old mosque completely in ruins, many of its twenty-one domes having fallen in and the surrounding walls given way, a tablet over the gate-way records that that this building alone cost within a few pice, that of the whole fort.

Amongst the Zoology of these hills, interesting to the naturalist and the sportsman, are found the Indian Bison, "bos caviformis" tiger, leopard, cheeta, bear, wolf, hyenna and wild boar. The sambur, nielghye, chetul, antilope, bâkur corona or four horned antilope. The wild dog which is said to run down its prey hunting in packs and even attacking and killing the royal tiger, jackall, lynx, wild and civet cat, foxes, porcupines, ichnuneous and hares are

all numerous. The grey flying squirrel having a body the size of a cat, covered with thick slaty colored fur and bushy tail is seen in the ravines, also monkeys, pea-fowl and jungle fowl. The rock snake has been met with of formidable dimensions twenty-two feet in length.

## REMARKS ON THE TABLES GENERALLY.

Having been able to obtain through the kindness of the Superintending Surgeon of the Hyderabad Subsidiary Force, a General Abstract Return of the Native Sick from 1840 to 1850 inclusive, we are enabled to contrast it with the force of his Highness the Nizam's Army for the same period.

Table No. 2 shows the aggregate strength of the Nizam's Army to have been upwards of 17,000 stronger than the Native Hyderabad Subsidiary Force. The amount of admissions into hospital from disease and various causes appear to be pretty nearly equal, though the casualties in the subsidiary force are considerably greater which is readily accounted for when we find that their admissions from cholera alone were 2,384, and the casualties 964; whereas in the Nizam's force the number of cases treated were 625, and deaths 230, showing that by this disease alone their mortality to have been 734 more than in the Nizam's force.

*Fevers* of the various types in the Subsidiary Native force appear as 29,069, in the Nizam's 28,903, so that they may be considered on a par with each other and singular as it may appear the deaths in each force correspond, being 234.

*Dysentry.*—The Subsidiary force had admissions 1,134, the Nizam's 2,891; the deaths here again being nearly equal 58 to 60.

*Diarrhœa.*—The Subsidiary force had 1,625 patients un-

der treatment and 30 died, the Nizam's force 974 cases and 32 proving fatal.

*Hepatitis.*—The admissions and deaths in both forces were nearly equal, the Subsidiary 164 cases; deaths, 17; the Nizam's 157 with 18 deaths.

*Rheumatism.*—Subsidiary 5,165 admissions, deaths 33, the Nizam's 4,348 and 36 deaths.

*Dropsy.*—Subsidiary admissions 142 and deaths 32, the Nizam's admissions 61, deaths 33.

*Venereal.*—Subsidiary 2,726 admissions, deaths 11, Nizam's 1,195, deaths 11, the corresponding number in the casualties, though the number treated vary so much is singularly remarkable; yet the excess in admissions of dysentry and rheumatism in the Nizam's army is probably owing to the men of the cavalry being at all seasons of the year sent on "dours" and escort duty, quite unprovided with the usual protection of tents, &c., which is not the case with the regular troops of the contingent, and this naturally tends to increase the number of admissions under the heads of dysentry and rheumatism.

*Dracunculus* prevails more or less at all the stations but particularly at Warrungul, Lingsoogoor and Goolburgah, at these three places the disease may be considered endemial, for regiments that have almost been free from the disease at other stations of the army, have on their removal to these places after a residence of a few months become attacked and more cases are returned in the half yearly reports by their medical officers than in the rest of the whole army, whether this arises from drinking well water or by bathing in tanks, for it so happens that at each of these stations named there are reservoirs of this nature in the immediate neighbourhood of the lines, and

the disease is most prevalent during the season when these tanks are getting low and drying up.

The 4th Regiment of Cavalry when at Aurungabad in 1849, had but two cases although separated in Detachments and distributed around the country, on being removed in 1850 to Goolburgah, they seem to have at first been free from the disease, but in the following year 22 cases were reported, and in the ensuing six months 19; one proving fatal the man dying from Tetanus.

The 1st regiment of infantry had in 1849 at Lingsoogoor 21 cases and after relieving the 3d regiment of infantry at Warrungul the same number the following year.

The 8th regiment at Aurungabad in 1850, before going to Lingsoogoor, had but one case, and the following year three, and during the succeeding six months eleven.

The treatment generally adopted when the disease first appears is to apply a poultice of the pounded leaves of the cactus indicus to the swelling, and as soon as the head of the worm makes its appearance or comes through it is fixed to a thin slip of sticking plaster, and slowly extracted by twisting it round as far as practicable at a time without force, once or twice a day until the whole has come away and which it does more readily than by any other application that has been tried, cold water also poured on the part at the time of extraction is very useful.

**Table No. 1.**—*Exhibiting the Strength, Admissions and Deaths of the Native Troops of the Hyderabad Subsidiary Force, from the year*, 1839 *to* 1851.

| Years. | Strength for each Year. | Admitted. | Died. | Annual per-centage of Sick to Strength. | Annual per-centage of Deaths to Sick. | Annual per-centage of Deaths to Strength. |
|---|---|---|---|---|---|---|
| 1840 | 9422 | 6042 | 110 | 64·1158 | 1·8205 | 1·1674 |
| 1841 | 11946 | 6885 | 152 | 57·6343 | 2·2139 | 1·2723 |
| 1842 | 8063 | 5532 | 191 | 68·6096 | 3·8156 | 2·3682 |
| 1843 | 13482 | 8005 | 400 | 59·3754 | 4·9968 | 2·9669 |
| 1844 | 9566 | 7144 | 193 | 74·6811 | 2·7015 | 2·0175 |
| 1845 | 9518 | 7895 | 94 | 82·9459 | 1·1912 | 0·9875 |
| 1846 | 7036 | 5154 | 270 | 73·2518 | 5·2386 | 3·8374 |
| 1847 | 8595 | 4482 | 68 | 52·1465 | 1·5171 | 0·7911 |
| 1848 | 8101 | 4325 | 63 | 53·3884 | 1·4566 | 0·7776 |
| 1849 | 7130 | 5484 | 52 | 76·9144 | 0·9482 | 0·7293 |
| 1850 | 6785 | 5377 | 120 | 79·2483 | 2·2317 | 1·7686 |
| | 99644 | 66325 | 1713 | 66·5218 | 2·5827 | 1·7191 |

**Hyderabad Subsidiary Force.**

*Total Admissions and Deaths from* 1839 *to* 1851.

| Average Strength. | Admissions. | Deaths. | Average Sick to Strength. | Average Deaths to Sick. | Average Deaths to Strength. |
|---|---|---|---|---|---|
| 99644 | 66325 | 1713 | 1·5023 | 38·7186 | 58·1692 |

**Table No. 2.**—*Exhibiting the Strength, Admissions and Deaths of the Nizam's Army, from the year* 1839 *to* 1851.

| Years. | Strength for each Year. | Admitted. | Died. | Annual per-centage of Sick to Strength. | Annual per-centage of Deaths to Sick. | Annual per-centage of Deaths to Strength. |
|---|---|---|---|---|---|---|
| 1840 | 10670 | 5913 | 78 | 55·4170 | 1·3193 | ·7310 |
| 1841 | 10506 | 5395 | 97 | 51·3516 | 1·7979 | ·9232 |
| 1842 | 10625 | 6092 | 158 | 57·3364 | 2·5935 | 1·4870 |
| 1843 | 10798 | 5954 | 78 | 55·1398 | 1·3104 | ·7223 |
| 1844 | 10830 | 5004 | 66 | 46·2049 | 1·3189 | ·6094 |
| 1845 | 10738 | 4896 | 89 | 45·5950 | 1·8178 | ·8288 |
| 1846 | 10726 | 5551 | 113 | 51·7527 | 2·0356 | 1·0535 |
| 1847 | 10470 | 6019 | 73 | 57·4880 | 1·2128 | ·6972 |
| 1848 | 10474 | 6620 | 75 | 63·2041 | 1·1291 | ·7165 |
| 1849 | 10490 | 7058 | 74 | 67·2831 | 1·0484 | ·7054 |
| 1850 | 10465 | 7197 | 84 | 68·7721 | 1·1671 | ·8026 |
| | 116792 | 65699 | 985 | 56·2529 | 1·4992 | .8433 |

**Nizam's Army.**

*Total Admissions and Deaths from* 1839 *to* 1851.

| Average Strength. | Admissions. | Deaths. | Average Sick to Strength. | Average Deaths to Sick. | Average Deaths to Strength. |
|---|---|---|---|---|---|
| 116792 | 65699 | 985 | 1·7776 | 66·6994 | 118·4690 |

## TABLE OF PROPORTIONS.

| | Aggregate Strength. | Admissions. | Deaths. | Proportion of Strengths. | Proportion of Admissions. | Proportion of Deaths. |
|---|---|---|---|---|---|---|
| Nizam's Army, - - - - - | 116792 | 65699 | 985 | 1·1721 to 1 | 1· to 1·0095 | 1· to 1·7390 |
| Hyderabad Subsidiary Force, - - | 96644 | 66325 | 1713 | 1· to 1·1721 | 1·0095 to 1 | 1·7390 to 1 |

Nizam's Army, - - - - - 17048 more in the Aggregate than the Hyderabad Subsidiary Force.

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Hyderabad Subsidiary Force, - - 66·5218 Admissions in every 100 of the Aggregate Strength.
Nizam's Army, - - - - - 56·2529 do. do. do. do.
Nizam's Army, - - - - - 10·2689 less Admissions in every 100 than the Hyderabad Subsidiary Force.
Hyderabad Subsidiary Force, - - - 2·5827 Deaths to every 100 Admissions.
Nizam's Army, - - - - - 1·4992 do. do. do.
Nizam's Army, - - - - - 1·0835 less Deaths in every 100 Admissions.
Hyderabad Subsidiary Force, - - 1·7191 Deaths in every 100 of Aggregate Strength.
·8433

Nizam's Army, - - - - - ·8758 less Deaths in every 100 of Aggregate Strength.

# NIZAM'S ARMY.

**Descriptive Table, No. 3.**—*Showing the Centages of Admissions and Deaths to Aggregate Strengths for a period of 8 years.*

| | Years. | Corps. | Strength. | Admissions. | Deaths. | Centage Sick to Strength. | Centage Deaths to Sick. | Centage Deaths to Strength. |
|---|---|---|---|---|---|---|---|---|
| Mominabad. | 1844 | 3d and 5th Cavalry, - - - - - | 1176 | 472 | 10 | 40·1360 | 2·1186 | ·8503 |
| | 1845 | " " " " - - - - - | 1176 | 207 | 7 | 17·6020 | 3·3816 | 5952 |
| | 1846 | " " " " - - - - - | 1176 | 646 | 10 | 54·9319 | 1·5479 | ·8503 |
| | 1847 | 1st " 5th Cavalry, - - - - - | 1131 | 778 | 6 | 68·7886 | 0·7712 | ·5305 |
| | 1848 | " " " " - - - - - | 1175 | 859 | 9 | 73·1063 | 1·0477 | ·7659 |
| | 1849 | " " " " - - - - - | 1175 | 860 | 8 | 73·1914 | 0·9302 | ·6808 |
| | 1850 | 2d " 4th Cavalry, - - - - - | 130 | 1015 | 12 | 89·8230 | 1·1822 | 1·1619 |
| | 1851 | " " " " - - - - - | 1126 | 1005 | 9 | 89·2539 | 0·8955 | ·7992 |
| | | Total.. | 9265 | 6142 | 71 | 66·2924 | 1·1559 | ·7663 |
| Aurungabad. | 1844 | 2d Compy. Arty. 1st Cavy. 1st and 4th Infantry, Hill Rangers, - - - - | 2698 | 1300 | 16 | 48·1838 | 1·2307 | ·5930 |
| | 1845 | " " " " " | 2700 | 1043 | 16 | 38·6296 | 1·5340 | ·5925 |
| | 1846 | " " " " " | 2698 | 1330 | 31 | 49·2587 | 2·3308 | 1·1489 |
| | 1847 | 2d Compy. Arty. 4th Cavy. 5th and 8th Infantry, Hill Rangers, - - - | 2668 | 1368 | 13 | 51·2743 | 0·9503 | ·4836 |
| | 1848 | " " " " " | 2628 | 1507 | 20 | 57·3439 | 1·3271 | ·7610 |
| | 1849 | " " " " " | 2673 | 1555 | 11 | 58·1743 | 0·7074 | ·4152 |
| | 1850 | 2d Compy. Arty. 5th Cavy. 5th and 6th Infantry, Hill Rangers, - - - - | 2570 | 1685 | 20 | 65·5642 | 1·1869 | ·7782 |
| | 1851 | " " " " " | 2570 | 1889 | 21 | 73·5019 | 1·1117 | ·8171 |
| | | Total.. | 21205 | 11677 | 148 | 55·0672 | 1·2674 | ·6979 |
| Hyderabad. | 1844 | 1st Com. Art. 2d Cav. 2d, 5th and 6th Inf. | 3733 | 1659 | 19 | 44·4414 | 1·1452 | ·5089 |
| | 1845 | " " " " " | 3553 | 1590 | 40 | 44·7509 | 2·5157 | 1·1258 |
| | 1846 | " " " " " | 3552 | 1560 | 39 | 49·7422 | 2·5 | 1·0979 |
| | 1847 | 1st Com. Art. 3d Cav. 1st, 3d and 6th Inf. | 3337 | 1660 | 25 | 49·7452 | 1·5060 | ·7491 |
| | 1848 | " " " " " | 3361 | 1908 | 18 | 56·7688 | 0·9433 | ·5355 |
| | 1849 | " " " " " | 3321 | 1926 | 18 | 57·9945 | 0·9345 | ·5420 |
| | 1850 | 1st Com. Art. 1st. Cav. 1st, 3d and 8th Inf. | 3366 | 2087 | 23 | 62·0023 | 1·1020 | ·6833 |
| | 1851 | " " " " " | 3361 | 1859 | 24 | 55·3109 | 1·8289 | 1·0116 |
| | | Total... | 27584 | 14249 | 216 | 51·6567 | 1·5158 | ·7836 |
| Ellichpoor. | 1844 | 4th Com. Art. Rt. Wg. 4th Cav. 3d and 8th Infantry, - - - - - - - | 2049 | 1029 | 14 | 50·2196 | 1·3605 | ·6832 |
| | 1845 | " " " " " | 2115 | 1201 | 18 | 56·7848 | 1·4980 | ·8510 |
| | 1846 | " " " " " | 2155 | 1264 | 21 | 58·6542 | 1·6614 | ·9744 |
| | 1847 | 4th Com. Art. Rt. Wg. 2d Cav. 4th and 7th Infantry, - - - - - - | 1992 | 1553 | 19 | 77·9618 | 1·2234 | ·9538 |
| | 1848 | " " " " " | 2008 | 1723 | 24 | 85·8067 | 1·3929 | 1·1952 |
| | 1849 | " " " " " | 2108 | 1675 | 23 | 79·4592 | 1·3731 | 1·0918 |
| | 1850 | 4th Com. Art. Rt. Wg. 3d Cav. 2d and 7th Infantry, - - - - - - | 2101 | 1440 | 20 | 68·5387 | 1·3888 | ·9519 |
| | 1851 | " " " " " | 2117 | 1200 | 22 | 56·6839 | 1·8333 | 1·0392 |
| | | Total.. | 16645 | 11085 | 161 | 66·5965 | 1·4524 | ·9672 |
| Hingolee. | 1844 | 3d Com. Art. Lt. Wg. 4th Cav. and 7th Inf. | 1172 | 595 | 7 | 50·7678 | 1·1764 | ·5972 |
| | 1845 | " " " " " | 1193 | 503 | 8 | 42·2464 | 1·5904 | ·6705 |
| | 1846 | " " " " " | 1142 | 751 | 12 | 65·7618 | 1·5978 | 1·0507 |
| | 1847 | 3d Com. Art. Lt. Wg. 2d Cav. and 2d Inf. | 1340 | 661 | 10 | 49·3283 | 1·5128 | ·7642 |
| | 1848 | " " " " " | 1300 | 623 | 4 | 47·9630 | 0·6420 | ·3077 |
| | 1849 | " " " " " | 1271 | 1042 | 14 | 81·9826 | 1·3425 | 1·1015 |
| | 1850 | 3d Com. Art. Lt. Wg. 3d Cav. and 4th Inf. | 1266 | 970 | 9 | 76·6192 | 0·9278 | ·7100 |
| | 1851 | " " " " " | 1261 | 737 | 12 | 58·4456 | 1·6282 | ·9516 |
| | | Total.. | 9945 | 5882 | 76 | 59·1452 | 1·2920 | ·7642 |
| | | Grand Total.. | 81644 | 49035 | 672 | 57·9308 | 1·3704 | ·7939 |

**No. 4.**—*General Table showing the Centages in the Nizam's Army of Admissions and Deaths to Aggregate Strengths for a period of* 8 *years, from* 1844 *to* 1851 *inclusive.*

| DIVISIONS. | Strength. | Admissions. | Deaths. | Average per-centage of Sick to Strength. | Average per-centage of Deaths to Sick. | Average per-centage of Deaths to Strength. |
|---|---|---|---|---|---|---|
| Mominabad, | 9265 | 6142 | 71 | 66·2924 | 1·1559 | ·7663 |
| Aurungabad, | 21205 | 11677 | 148 | 55·0672 | 1·2674 | ·6979 |
| Hyderabad, | 27584 | 14249 | 216 | 51·6567 | 1·5158 | ·7836 |
| Ellichpoor, | 16645 | 11085 | 161 | 66·5965 | 1·4524 | ·9672 |
| Hingolee, | 9945 | 5882 | 76 | 59·1452 | 1·2920 | ·7642 |
| Total... | 84644 | 49035 | 672 | 57·9308 | 1·3704 | ·7939 |

**TABLE OF PROPORTIONS.**

| DIVISIONS. | Strength. | Admissions. | Deaths. |
|---|---|---|---|
| Mominabad to Aurungabad, | 1 to 2·2887 | 1 to 1·9011 | 1 to 2·0845 |
| „ Hyderabad, | „ „ 2·9772 | „ „ 2·3199 | „ „ 3·0704 |
| „ Hingolee, | „ „ 1·0733 | „ „ 1·0442 | „ „ 1·0704 |
| „ Ellichpoor, | „ „ 1·7965 | „ „ 1·8047 | „ „ 2·2675 |
| Hyderabad to Aurungabad, | „ „ 1·3008 | „ „ 1·2202 | „ „ 1·4594 |
| „ Hingolee, | „ „ 2·7736 | „ „ 2·4224 | „ „ 2·8421 |
| „ Ellichpoor, | „ „ 1·6571 | „ „ 1·2845 | „ „ 1·3416 |
| Aurungabad to Hingolee, | „ „ 2·1322 | „ „ 1·9852 | „ „ 1·9473 |
| „ Ellichpoor, | „ „ 1·2739 | „ „ 1·0534 | „ „ 1·0878 |
| Hingolee to Ellichpoor, | „ „ 1·6736 | „ „ 1·8845 | „ „ 2·1184 |

**Table No. 5.**—*Shows the Annual Strengths, Admissions and Deaths of the 4 Companies Nizam's Artillery, from* 1844 *to* 1851 *inclusive.*

| CORPS. | Stations. | Strength. | Admissions. 1844. | 1845. | 1846. | 1847. | 1848. | 1849. | 1850. | 1851. | Total Admissions. | Total Deaths. | 1 Centage Sick to Strength. | 2 Centage Deaths to Sick. | 3 Centage Deaths to Strength. | 4 Average Sick to Strength. | 5 Average Deaths to Sick. | 6 Average Deaths to Strength. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st Company, | Bolarum, | 419 | 149 | 162 | 128 | 229 | 182 | 188 | 225 | 175 | 1438 | 23 | 343·1981 | 1·5914 | 5·4892 | 3·4319 | 62·5217 | 18·2173 |
| 2d do. | Aurungabad, | 267 | 43 | 46 | 62 | 71 | 84 | 96 | 152 | 125 | 679 | 22 | 254·3071 | 3·3240 | 8·2397 | 2·5430 | 30·8590 | 12·1363 |
| 3d do. | Hingolee, | 196 | 86 | 95 | 94 | 100 | 100 | 124 | 96 | 86 | 781 | 17 | 398·4693 | 2·1765 | 8·6734 | 3·9846 | 45·9411 | 11·5294 |
| 4th do. | Ellichpoor, | 248 | 175 | 189 | 198 | 245 | 258 | 181 | 158 | 159 | 1563 | 25 | 630·2418 | 1·5994 | 10·8064 | 6·3024 | 62·52 | 9·92 |
| | Total... | 1130 | 453 | 492 | 482 | 645 | 624 | 589 | 631 | 545 | 4461 | 87 | 394·7787 | 1·9502 | 7·6991 | 3·9477 | 51·2758 | 12·9885 |

*Comparisons of Strengths, Admissions and Deaths.*

| STATIONS. | Strength. | Admissions. | Deaths. |
|---|---|---|---|
| Bolarum to Aurungabad, | 1·5318 | 2·1178 | 1·0454 |
| ,, Hingolee, | 2·1377 | 1·8412 | 1·3529 |
| ,, Ellichpoor, | 1·6895 | 1·0869 | 1·0869 |
| Aurungabad to Hingolee, | 1·3622 | 1·1502 | 1·2941 |
| ,, ,, Ellichpoor, | 1·0766 | 2·3019 | 1·1363 |
| Hingolee to Ellichpoor, | 1·2653 | 2·0012 | 1·4705 |

No. 1 Read $343\frac{3}{4}$ Admissions to the Strength of each 100 men.
,, 2 ,, $1\frac{5}{8}$ Died to every 100 treated.
,, 3 ,, $5\frac{1}{2}$ ,, ,, 100 of the Strength.
,, 4 ,, $3\frac{3}{8}$ Sick to 1 of the Strength.
,, 5 ,, 1 Died to $62\frac{1}{2}$ treated.
,, 6 ,, 1 ,, $18\frac{3}{4}$ of Strength.

**No. 6.**—*Table showing the percentages of the Admissions and Deaths to the Aggregate Strengths of the* 4 *Companies of Nizam's Artillery, from* 1844 *to* 1851 *inclusive.*

| | Aggregate Strength. | Admissions. | Deaths. | Proportions. | | |
|---|---|---|---|---|---|---|
| | | | | Centage Sick to Strength. | Centage Death to Sick. | Centage Death to Strength. |
| Bolarum, - - | 3352 | 1438 | 23 | 42·9000 | 1·5994 | ·6861 |
| Aurungabad, - | 2136 | 679 | 22 | 31·7883 | 3·2400 | 1·0299 |
| Hingolee, - - | 1568 | 781 | 17 | 43·4311 | 2·1767 | 1·0841 |
| Ellichpoor, - | 1984 | 1563 | 25 | 78·7802 | 1·5994 | 1·2600 |

| | *Admissions.* | *Deaths.* |
|---|---|---|
| Ellichpoor,...... | 78·7802 | 1·2600 in every 100 men. |
| Hingolee,........ | 43·4311 | 1·0841 „ „ „ |
| Bolarum,........ | 42·9000 | ·6861 „ „ „ |
| Aurungabad,... | 31·7883 | 1·0299 „ „ „ |

This shows Bolarum more Sickness and less Deaths than Aurungabad; Hingolee more Sickness and more Deaths than Bolarum; Ellichpoor *more Sickness and more Deaths than* Bolarum and Aurungabad, taking the Admissions and Deaths per 100 men.

## NIZAM'S ARMY.

**No. 7.**—*Table showing the Aggregate Strengths, Annual Averages, Admissions and Deaths with Centages for* 12 *and* 8 *years separately.*

| Years. | Aggregate Strength. | Average Annual Strength. | Total Admissions. | Total Deaths. | Average Annual Admissions. | Average Annual Deaths. | Annual Sick to Strength. | Annual Death to Sick. | Annual Death to Strength. | Centage Sick to Strength. | Centage Death to Sick. | Centage Death to Strength. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 127243 | 10·603 7/12 | 72389 | 1083 | 6032 5/12 | 90¼ | 1·7577 | 66·8411 | 117·4912 | 56·889 | 1·4960 | ·08511 |
| 8 | 84644 | 10580½ | 49035 | 672 | 6129⅜ | 84 | 1·7261 | 72·9687 | 125·9583 | 57·9308 | 1·3704 | ·7939 |

# NIZAM'S ARMY.

**No. 8.**—*Table showing the Admissions and Deaths from the Principal and other Diseases, Epidemic or Endemic during the period of 8 years.*

DISEASES.

| Years. | | Admissions and Deaths. | Ambustio. | Anasarca. | Apoplexia. | Apostema. | Ascites. | Asthma. | Atrophia. | Beriberi. | Bubo Simplex. | Carditis. | Catarrhus. | Cephalalgia. | Chachexia. | Cholera. | Colica. | Contusio. | Cynanche. | Delirium Tremens. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1844 | Admitted, | 5004 | 25 | 1 | 0 | 8 | 1 | 48 | 86 | 0 | 18 | 0 | 40 | 20 | 1 | 12 | 75 | 496 | 25 | 2 |
| | Died,..... | 66 | 0 | 1 | 0 | 0 | 1 | 3 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 2 | 0 | 0 | 0 |
| 1845 | Admitted, | 4896 | 32 | 5 | 2 | 11 | 2 | 15 | 75 | 0 | 57 | 1 | 37 | 18 | 4 | 55 | 93 | 554 | 22 | 0 |
| | Died,..... | 89 | 1 | 1 | 2 | 0 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 2 | 0 |
| 1846 | Admitted, | 5551 | 34 | 9 | 3 | 13 | 2 | 27 | 99 | 1 | 40 | 2 | 35 | 28 | 10 | 98 | 73 | 537 | 17 | 1 |
| | Died,..... | 113 | 0 | 5 | 3 | 0 | 2 | 3 | 6 | 1 | 1 | 2 | 1 | 0 | 1 | 38 | 1 | 1 | 0 | 0 |
| 1847 | Admitted, | 6019 | 34 | 5 | 1 | 24 | 3 | 52 | 146 | 2 | 36 | 0 | 62 | 23 | 12 | 3 | 75 | 610 | 19 | 0 |
| | Died,..... | 73 | 0 | 3 | 1 | 1 | 2 | 1 | 7 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1848 | Admitted, | 6620 | 31 | 4 | 5 | 7 | 0 | 48 | 124 | 0 | 30 | 2 | 63 | 32 | 9 | 2 | 79 | 575 | 39 | 1 |
| | Died,..... | 75 | 0 | 3 | 3 | 1 | 0 | 5 | 7 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 |
| 1849 | Admitted, | 7058 | 34 | 3 | 5 | 10 | 2 | 75 | 143 | 0 | 29 | 1 | 61 | 18 | 3 | 21 | 72 | 738 | 21 | 2 |
| | Died,..... | 74 | 0 | 3 | 3 | 0 | 0 | 1 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 |
| 1850 | Admitted, | 7197 | 32 | 0 | 4 | 7 | 5 | 82 | 106 | 0 | 30 | 0 | 78 | 18 | 8 | 31 | 78 | 650 | 38 | 0 |
| | Died,..... | 84 | 0 | 0 | 4 | 0 | 2 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 0 | 1 | 0 | 0 |
| 1851 | Admitted, | 6690 | 32 | 1 | 8 | 5 | 4 | 53 | 114 | 0 | 15 | 0 | 55 | 18 | 5 | 49 | 91 | 645 | 24 | 3 |
| | Died,..... | 98 | 0 | 1 | 7 | 2 | 3 | 4 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 17 | 0 | 0 | 0 | 1 |

| Years. | | Diarrhæa. | Dracunculus. | Dysenteria. | Dyspepsia. | Dyspnœa. | Enteritis. | Epilepsia. | Erysipelas. | Febris Ephemera. | Do. Intermittens. | Do. Remittens. | Fractura. | Furunculus. | Gastritis. | Gonorrhœa. | Hæmoptysis. | Hæmorrhois. | Hepatitis. | Hernia. | Hydrophobia. | Icterus. | Luxatio. | Mania. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1844 | Admitted, | 53 | 66 | 201 | 29 | 2 | 0 | 5 | 2 | 41 | 1883 | 71 | 15 | 272 | 0 | 59 | 3 | 20 | 16 | 57 | 0 | 0 | 10 | 12 |
| | Died,..... | 4 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1845 | Admitted, | 84 | 70 | 246 | 36 | 6 | 0 | 2 | 7 | 36 | 1916 | 44 | 13 | 209 | 1 | 40 | 1 | 15 | 7 | 34 | 0 | 10 | 2 | 5 |
| | Died,..... | 2 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 |
| 1846 | Admitted, | 100 | 91 | 281 | 44 | 9 | 2 | 4 | 1 | 89 | 2289 | 60 | 14 | 231 | 1 | 43 | 0 | 7 | 15 | 43 | 0 | 6 | 8 | 1 |
| | Died,..... | 2 | 0 | 9 | 0 | 2 | 0 | 1 | 0 | 0 | 12 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 |
| 1847 | Admitted, | 88 | 107 | 250 | 39 | 1 | 3 | 4 | 3 | 168 | 2518 | 35 | 12 | 248 | 0 | 26 | 0 | 11 | 13 | 34 | 0 | 7 | 7 | 2 |
| | Died,..... | 3 | 0 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 2 |
| 1848 | Admitted, | 69 | 157 | 182 | 42 | 2 | 0 | 3 | 0 | 254 | 3067 | 53 | 11 | 334 | 3 | 30 | 1 | 8 | 23 | 19 | 0 | 6 | 6 | 4 |
| | Died,..... | 2 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 20 | 8 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1849 | Admitted, | 80 | 124 | 217 | 16 | 2 | 2 | 4 | 2 | 180 | 3350 | 51 | 14 | 379 | 4 | 22 | 0 | 17 | 19 | 20 | 0 | 2 | 5 | 9 |
| | Died,..... | 5 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 |
| 1850 | Admitted, | 103 | 118 | 236 | 46 | 0 | 0 | 4 | 6 | 120 | 3337 | 154 | 13 | 411 | 1 | 42 | 1 | 13 | 16 | 47 | 1 | 6 | 2 | 7 |
| | Died,..... | 2 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | 8 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| 1851 | Admitted, | 119 | 84 | 212 | 65 | 0 | 1 | 0 | 2 | 59 | 3224 | 97 | 9 | 410 | 0 | 23 | 3 | 17 | 13 | 29 | 0 | 1 | 1 | 9 |
| | Died,..... | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

| Years. | | Ophthalmia. | Paralysis. | Paronychia. | Phthisis Pulmon. | Pleuritis. | Pneumonia. | Psora. | Rheumatismus. | Rubeola. | Splenitis. | Strictura Urethræ. | Subluxatio. | Syphilis. | Tetanus. | Ulcus. | Variola. | Vulnus. | Other Complaints. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1844 | Admitted, | 115 | 7 | 31 | 3 | 0 | 3 | 188 | 343 | 16 | 9 | 5 | 67 | 75 | 0 | 253 | 30 | 24 | 170 |
| | Died,..... | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 3 | 3 | 2 |
| 1845 | Admitted, | 130 | 5 | 22 | 5 | 0 | 4 | 141 | 369 | 0 | 6 | 7 | 50 | 41 | 0 | 191 | 4 | 30 | 125 |
| | Died,..... | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1846 | Admitted, | 163 | 8 | 22 | 5 | 0 | 8 | 118 | 331 | 0 | 4 | 5 | 72 | 58 | 0 | 235 | 7 | 25 | 122 |
| | Died,..... | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 1847 | Admitted, | 134 | 7 | 18 | 5 | 2 | 4 | 159 | 392 | 9 | 7 | 9 | 89 | 55 | 0 | 253 | 18 | 28 | 147 |
| | Died,..... | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| 1848 | Admitted, | 139 | 14 | 20 | 1 | 1 | 7 | 196 | 329 | 18 | 4 | 11 | 82 | 52 | 1 | 251 | 34 | 26 | 109 |
| | Died,..... | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 3 |
| 1849 | Admitted, | 121 | 8 | 28 | 1 | 1 | 4 | 216 | 323 | 2 | 1 | 8 | 87 | 49 | 0 | 221 | 3 | 57 | 121 |
| | Died,..... | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 1850 | Admitted, | 116 | 10 | 23 | 2 | 1 | 5 | 264 | 362 | 0 | 3 | 5 | 82 | 53 | 4 | 267 | 3 | 39 | 107 |
| | Died,..... | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 3 |
| 1851 | Admitted, | 134 | 15 | 25 | 2 | 0 | 14 | 216 | 342 | 0 | 5 | 1 | 93 | 26 | 0 | 209 | 2 | 22 | 84 |
| | Died,..... | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| Years. | Strength. | Annual percentage of Sick to Strength. | Annual percentage of Deaths to Sick treated. | Annual percentage of Deaths to Strength. |
|---|---|---|---|---|
| 1844 | 10830 | 74·205 | 1·318 | ·6094 |
| 1845 | 10738 | 45·595 | 1·817 | ·9219 |
| 1846 | 10726 | 51·7527 | 2·035 | 1·0535 |
| 1847 | 10470 | 57·488 | 1·211 | ·6972 |
| 1848 | 10474 | 63·203 | 1·132 | ·7160 |
| 1849 | 10490 | 67·2831 | 1·048 | ·7054 |
| 1850 | 10465 | 68·772 | 1·167 | ·8026 |
| 1851 | 10451 | 64·08 | 1·494 | ·4947 |
| Total | 84644 | 57·9303 | 1·3704 | ·7939 |

# NIZAM'S ARMY.

**No. 9.**—*Table exhibiting the Number of Admissions and Deaths from each Class of Disease for* 8 *Years.*

| CLASSES. | DISEASES. | From 1844 to 1851. Aggregate Strength 81644. Admitted. | Died. | Total Admissions and Deaths from each Class of Disease. Admitted. | Died. | Average percentage of Sick to Strength. | Average percentage of Deaths to Sick. | Average percentage of Deaths to Strength. |
|---|---|---|---|---|---|---|---|---|
| Fevers, - - - | Febris Ephemera, - - | 947 | 0 | 23096 | 164 | 27·2860 | ·7094 | ·1937 |
| | ,, Intermittens, - | 21584 | 117 | | | | | |
| | ,, Remittens, - - | 565 | 47 | | | | | |
| Cholera, - - - | Cholera, - - - - - | 271 | 111 | 271 | 111 | ·3201 | 40·9594 | ·1311 |
| Diseases of the Abdominal Viscera, | Dysenteria, - - - - - | 1825 | 48 | 3791 | 108 | 4·4787 | 2·8488 | ·1275 |
| | Diarrhœa, - - - - | 696 | 27 | | | | | |
| | Colica, - - - - - | 636 | 5 | | | | | |
| | Hœmorrhois, - - - | 108 | 0 | | | | | |
| | Enteritis, - - - - - | 8 | 2 | | | | | |
| | Gastritis, - - - - | 10 | 3 | | | | | |
| | Splenitis, - - - - - | 39 | 2 | | | | | |
| | Hepatitis, - - - - | 122 | 15 | | | | | |
| | Dyspepsia, - - - - - | 347 | 6 | | | | | |
| Diseases of the Lungs, | Catarrhus, - - - - | 431 | 4 | 946 | 57 | 1·1176 | 6·0253 | ·0673 |
| | Asthma, - - - - - | 400 | 19 | | | | | |
| | Phthisis Pulmonalis, - | 24 | 17 | | | | | |
| | Hœmoptysis, - - - | 9 | 3 | | | | | |
| | Pleuritis, - - - - | 5 | 1 | | | | | |
| | Pneumonia, - - - - | 49 | 6 | | | | | |
| | Carditis, - - - - - | 6 | 4 | | | | | |
| | Dyspnœa, - - - - - | 22 | 3 | | | | | |
| Diseases of the Brain, | Apoplexia, - - - - | 28 | 23 | 367 | 42 | ·4335 | 11·4441 | ·4961 |
| | Epilepsia, - - - - - | 26 | 3 | | | | | |
| | Paralysis, - - - - | 74 | 6 | | | | | |
| | Cephalalgia, - - - - | 175 | 1 | | | | | |
| | Mania, - - - - - | 49 | 2 | | | | | |
| | Hydrophobia, - - - | 1 | 1 | | | | | |
| | Delirium Tremens, - - | 9 | 1 | | | | | |
| | Tetanus, - - - - - | 5 | 5 | | | | | |
| Diseases of the Eye, | Ophthalmia, - - - | 1052 | 0 | 1067 | 0 | 1· | 0 | 0 |
| | Amaurosis, - - - | 15 | 0 | | | | | |
| Do. Skin, - | Psora, - - - - - | 1498 | 0 | 1498 | 0 | 1· | 0 | 0 |
| Eruptive Fevers, - | Variola, - - - - - | 101 | 5 | 265 | 6 | ·3130 | ·2641 | ·0070 |
| | Varicella, - - - - | 96 | 0 | | | | | |
| | Rubeola, - - - - - | 45 | 1 | | | | | |
| | Erysipelas, - - - - | 23 | 0 | | | | | |
| Dropsies, - - - | Anasarca, - - - - - | 28 | 17 | 47 | 28 | ·0535 | 59·5744 | ·0330 |
| | Ascites, - - - - - | 19 | 11 | | | | | |
| Rheumatic Affections, | Rheumatismus, - - - | 2791 | 21 | 2928 | 22 | ·4591 | ·7514 | ·0259 |
| | Odontalgea, - - - - | 137 | 1 | | | | | |
| Venereal Affections, | Syphilis, - - - - - | 409 | 5 | 1052 | 8 | 1·2428 | ·7604 | ·0094 |
| | Gonorrhœa, - - - - | 289 | 0 | | | | | |
| | Hernia, - - - - - | 303 | 1 | | | | | |
| | Strictura, Urethræ, - | 51 | 2 | | | | | |
| Specific Diseases, | Atrophia, - - - - - | 893 | 61 | 1740 | 64 | 2·1116 | 3·6781 | ·0756 |
| | Beriberi, - - - - | 3 | 3 | | | | | |
| | Dracunculus, - - - | 817 | 0 | | | | | |
| | Scorbutus, - - - - | 4 | 0 | | | | | |
| | Scrophula, - - - - - | 23 | 0 | | | | | |
| Wounds and Injuries, | Fractura, - - - - | 101 | 4 | 6074 | 22 | 7·1759 | ·3654 | ·0259 |
| | Luxatio, - - - - - | 41 | 0 | | | | | |
| | Subluxatio, - - - - | 622 | 0 | | | | | |
| | Vulnus, - - - - - | 251 | 13 | | | | | |
| | Contusio, - - - - | 4805 | 4 | | | | | |
| | Ambustio, - - - - - | 254 | 1 | | | | | |
| Other Diseases including Phlogosis, Ulcus, &c. - | | 5893 | 40 | *5893 | 40 | 6·9621 | ·6787 | ·0472 |
| | Total... | 49035 | 672 | 49035 | 672 | 57·9303 | 1·3704 | ·7939 |

Average percentage of Deaths to Strength during these 8 years has been ·7939 to 100.

* Of this number were—

| | | |
|---|---|---|
| Phlogosis, - - - - | 3142 | 10 |
| Ulcus, . - - - - | 1879 | 3 |
| Bubo Simplex, - - | 285 | 1 |
| Total | 5306 | 14 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1563 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1563 | 25 |
| 0 | 0 | 0 | 0 | 0 | 0 | 1609 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 3212 | 26 |
| 45 | 3 | 554 | 7 | 0 | 0 | 1083 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3364 | 33 |
| 48 | 4 | 319 | 6 | 813 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2901 | 35 |
| 47 | 8 | 401 | 7 | 937 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2858 | 39 |
| 0 | 0 | 0 | 0 | 888 | 12 | 812 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 2530 | 34 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1032 | 13 | 0 | 0 | 865 | 8 | 3166 | 47 |
| 57 | 14 | 656 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 1046 | 33 | 0 | 0 | 3059 | 60 |
| 0 | 0 | 1019 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 950 | 20 | 2774 | 47 |
| 77 | 13 | 1512 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3446 | 49 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3431 | 47 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 435 | 17 | 0 | 0 | 0 | 0 | 3391 | 42 |
| 27 | 17 | 3549 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4576 | 64 |
| 0 | 0 | 1512 | 21 | 0 | 0 | 0 | 0 | 1114 | 19 | 0 | 0 | 0 | 0 | 4062 | 52 |
| 82 | 76 | 11085 | 161 | 2638 | 42 | 3504 | 29 | 2581 | 49 | 1046 | 33 | 1815 | 28 | 47231 | 662 |

| | | |
|---|---|---|
| ...ries, Vulnus, Contusio, Ambustio, | ·6787 | ·0472 |
| Other Diseases including Phlogosis, Ulcus | 1·3704 | ·7939 |

Average percentage of Deaths to Streng[th] these 8 years has been ·7939 to 100.

# NIZAM'S ARMY.

**No. II.**—*Calculus of the losses by Death in each Station, and in each Corps, for a period of* 8 *Years, from* 1844 *to* 1851 *inclusive.*

| CORPS. | Strength. | Bolarum. | Aurungabad. | Hingolee. | Ellichpoor. | Goolburgah. | Mominabad. | Lingsoogoor. | Muktull. | Warrungull. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st Company Artillery, - | 419 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 2d do. - - | 267 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 3d do. - - | 196 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 4th do. - - | 248 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 25 |
| 1st Cavalry, - - - | 585 | 9 | 6 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 26 |
| 2d do. - - - - | 570 | 18 | 0 | 3 | 7 | 0 | 5 | 0 | 0 | 0 | 33 |
| 3d do. - - - | 586 | 11 | 0 | 4 | 6 | 14 | 0 | 0 | 0 | 0 | 35 |
| 4th do. - - - | 586 | 0 | 8 | 8 | 7 | 16 | 0 | 0 | 0 | 0 | 39 |
| 5th do. - - - | 591 | 0 | 9 | 0 | 0 | 12 | 13 | 0 | 0 | 0 | 34 |
| 1st Infantry, - - | 790 | 0 | 26 | 0 | 0 | 0 | 0 | 13 | 0 | 8 | 47 |
| 2d do. - - - | 794 | 0 | 0 | 14 | 13 | 0 | 0 | 0 | 33 | 0 | 60 |
| 3d do. - - - - | 798 | 9 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 20 | 47 |
| 4th do. - - - | 792 | 0 | 19 | 13 | 17 | 0 | 0 | 0 | 0 | 0 | 49 |
| 5th do. - - - - | 792 | 11 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 6th do. - - - | 728 | 16 | 9 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 42 |
| 7th do. - - - - | 790 | 0 | 0 | 17 | 47 | 0 | 0 | 0 | 0 | 0 | 64 |
| 8th do. - - - | 790 | 0 | 12 | 0 | 21 | 0 | 0 | 19 | 0 | 0 | 52 |
| Total... | 10881 | 101 | 143 | 76 | 161 | 42 | 29 | 49 | 33 | 28 | 662 |

*From a Strength of* 10881—*Died* 662—*which is* 6·084 *per* 100.

If taken on an Annual Average, the calculation will be Annual Strength 1360⅛, Deaths 82¾ equal to 6·084 per 100 as above.

Cavalry Division—Goolburgah and Mominabad, - - 71 Deaths.
Hyderabad, - - - - - - - 101 „
Aurungabad, - - - - - - - - - 143 „
Hingolee, - - - - - - - - - 76 „
Ellichpoor, - - - - - - - - - 161 „
Goolburgah, - - - - - - - 42 „
Mominabad, - - - - - - - - - 29 „
Lingsoogoor, - - - - - - 49 „
Muktull, - - - - - - - - 33 „
Warrungull, - - - - - - - - 28 „

Total.. 662 Deaths.

## NIZAM'S ARMY.

**No. 12.**—*Average percentage of Deaths to Sick treated for a period of* 10 *Years.—N. B. Cholera cases omitted.*

| Years Inclusive. | Admissions. | Deaths. | Centage. *Deaths. Cases.* | Medical Officers. | |
|---|---|---|---|---|---|
| 1840 to 1841 | 880 | 8 | ·9090 to 100 | Turnbull,...... | 10/11 to 100 |
| ,, ,, 1848 | 3261 | 32 | ·9813 ,, ,, | Stewart, ...... | 9/10 nearly. |
| ,, ,, 1844 | 1216 | 17 | 1·3980 ,, ,, | McLachlan, .... | 1 4/10 ,, |
| ,, ,, 1846 | 2882 | 44 | 1·5267 ,, ,, | Walker,........ | 1 5/10 ,, |
| ,, ,, 1841 | 744 | 11 | 1·4785 ,, ,, | Calvert,. ..... | 1 5/10 ,, |
| ,, ,, 1847 | 2949 | 33 | 1·1190 ,, ,, | Laing, ........ | 1 1/10 ,, |
| ,, ,, 1849 | 3467 | 52 | 1·4998 ,, ,, | Thomson,...... | 1 5/10 ,, |
| ,, ,, 1849 | 4547 | 69 | 1·5174 ,, ,, | Stokes, ....... | 1 5/10 ,, |
| ,, ,, 1849 | 6186 | 77 | 1·2247 ,, ,, | Young,........ | 1 8/10 ,, |
| ,, ,, 1849 | 5237 | 49 | ·9356 ,, ,, | Bradley, ...... | 9/10 ,, |
| ,, ,, 1849 | 4414 | 51 | 1·1554 ,, ,, | Riddell,...... .. | 1 1/10 ,, |
| ,, ,, 1849 | 3895 | 45 | 1·1553 ,, ,, | Mackenzie,. ... | 1 2/10 ,, |
| 1840 | 477 | 5 | 1·0482 ,, ,, | Woods,...... .. | 1 5/10 ,, |
| 1842 to 1849 | 4040 | 42 | 1·0396 ,, ,, | Orr,.... ..... | 1 1/10 ,, |
| ,, ,, 1849 | 2521 | 33 | 1·3090 ,, ,, | McPherson,.... | 1 3/10 ,, |
| ,, ,, 1849 | 3369 | 49 | 1·4544 ,, ,, | Primrose,...... | 1 5/10 ,, |
| 1843 ,, 1849 | 2598 | 46 | 1·7705 ,, ,, | Morrogh,...... | 1 9/10 ,, |
| 1844 | 218 | 3 | 1·3761 ,, ,, | Peacock, ...... | 1 4/10 ,, |
| 1848 to 1849 | 1186 | 6 | ·5059 ,, ,, | McEgan,...... | 5/10 ,, |
| 1849 | 183 | 1 | ·5464 ,, ,, | Whitelock,... | 6/10 ,, |
| ,, | 160 | 0 | 0 ,, ,, | Ogilvie,....... | 0/10 |
| 10 Years. | 54430 | 673 | 1·2364 to 100 | | |

Read thus—Surgeon Turnbull lost by death the $\frac{10}{11}$ of a man out of 100 men.

Surgeons Walker, Calvert, Thomson, Stokes, Woods, Primrose and McLachlan, have nearly the same centage.

| | | | | |
|---|---|---|---|---|
| Surgeons | Stewart, Bradley and Turnbull, | do. | do. | do. |
| Do. | Laing, Riddell, McKenzie and Orr, | do. | do. | do. |
| Do. | Young and Morrogh, | do. | do. | do. |
| Do. | McEgan and Whitelock, | do. | do. | do. |
| Do. | McPherson and Sub-Assistant Surgeon Peacock, | | | do. |

In this calculation, the fractions affixed to the Medical Officers' names show the percentage of Deaths to Sick nearly, but the decimals show it more clearly.

## VACCINATION.

The reports from the medical officers of the contingent vary but little as to their success in diffusing the benefits of the Jennearian system amongst the Natives, which does not seem to arise from any disbelief in its prophylactic power, but from their constitutional apathy which no reasoning or persuation can overcome. Dr. Maclean Residency Surgeon and Superintendent of Vaccination who has kindly furnished the following table declares that were it not for the peons belonging to the establishment he could not keep up the lymph for a month, these people collect twice a week as many children as they can in the residency bazar and neighbouring villages, and the Native Vaccinator is bound to wait on the families of any respectable people in or out of the city who may require his services, the number vaccinated in this way is very considerable. Vaccine matter is supplied to all the out-stations of the Nizam's army whenever called for, on glasses or bone points, and on lancets.

Superintending Surgeon Geddes, of the Hyderabad Subsidiary Force communicates that Vaccination amongst the occupants of the large Military Bazars and adjacent Villages, was commenced about May 1850, and aided by the exertions of the Commissariat Officer who is allowed several peons to bring in the villagers and their children ; the number successfully vaccinated have been 6973 with only 1593 failures.

*Table showing the number of persons of all classes Vaccinated at the Hyderabad Residency, from the* 1*st January* 1839, *to* 31*st July*, 1852.

| PERIOD. | Successful. | Unsuccessful. | REMARKS. |
|---|---|---|---|
| Vaccinated in the Year 1839, - | 360 | 239 | |
| Do. do. 1840, | 459 | 300 | |
| Do. do. 1841, - | 682 | 214 | |
| Do. do. 1842, | 1345 | 223 | |
| Do. do. 1843, - | 1110 | 165 | |
| Do. do. 1844, | 577 | 93 | |
| Do. do. 1845, - | 594 | 198 | |
| Do. do. 1846, | 986 | 98 | |
| Do. do. 1847, - | 1272 | 135 | |
| Do. do. 1848, | 1364 | 272 | |
| Do. do. 1849, - | 1064 | 265 | |
| Do. do. 1850, | 971 | 90 | |
| Do. do. 1851, - | 1347 | 184 | |
| Do. from 1st January, to 31st July, 1852, - - - | 903 | 88 | |
| Total.. | 13034 | 2564 | |

(Sigd.) W. C. MACLEAN, M. D.
Residency Surgeon,
*Hyderabad.*

HYDERABAD RESIDENCY,
1*st August*, 1852.

# HYDERABAD SUBSIDIARY FORCE.

*General Return of Persons Vaccinated.*

| | Secunderabad. | | | | Jaulnah. | | | | Total. | | | | Grand Total. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Among Troops.* | | *In Bazars.* | | *Among Troops.* | | *In Bazars.* | | *Among Troops.* | | *In Bazars.* | | | | |
| | Successful. | Unsuccessful. | Successful. | Unsuccessful. | Successful. | Unsuccessful. | Successful. | Unsuccessful. | Successful. | Unsuccessful. | Successful. | Unsuccessful. | Successful. | Unsuccessful. | |
| For the Year of 1850, - - | 241 | 57 | 2480 | 429 | 1 | 20 | 0 | 0 | 242 | 77 | 2480 | 429 | 2722 | 506 | |
| Do. do. 1851, - | 578 | 105 | 1255 | 368 | 457 | 72 | 272 | 28 | 1035 | 177 | 1526 | 396 | 2561 | 573 | |
| From 1st January, to 30th June, 1852, - - | 204 | 19 | 553 | *354 | 28 | 0 | 905 | 141 | 232 | 19 | 1458 | *495 | 1690 | 514 | * Destroyed,...... 81<br>Absent,...... ...149<br>Total cases...230 |
| Total each Items... | 1023 | 181 | 4287 | 1151 | 486 | 92 | 1177 | 169 | 1509 | 273 | 5464 | 1320 | | | |
| Total of both Items... | 1204 | | 5438 | | 578 | | 1346 | | 1782 | | 6784 | | 6973 | 1593 | |
| General Total... | 6642 | | | | 1924 | | | | 8566 | | | | | | |